

Service Service Service

VR200/02/05/07/39/58

VR205/02/05

VR250/02/07/39/58

VR400/02/39/58

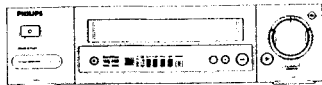
VR450/02/39/58

VR600/02/07/13/16/39

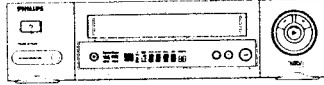
VR605/02/07/13/16/39/58

SB230/02

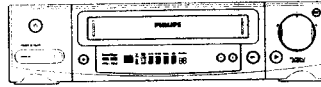
SB630/02/13/16



VR605



VR600



VRx50, SB630



VR200, VR400



VR205, SB230

Service Manual

Evolution: AA

Survey of versions:

/02/03	PAL B/G, VPS/PDC
/05	PAL I, UK
/07	PAL I, Ireland
/11	PAL B/G Belgium
/13	PAL B/G, Nordic
/16	PAL B/G, Spain
/38/39	SECAM L/L', PAL B/G, PAL I
/58/59	PAL/SECAM B/G, D/K

Survey of remote controls:

VR200/02/05/07/58, VR205/02/05	
VR250/02/07/58, VR400/02/58	
VR450/02/58, VR600/02/07/13/16	RT194/101GB 4822 219 10724
VR605/02/07/13/16/58, SB230/02	
SB630/02/13/16	
VR200/39, VR250/39, VR400/39	RT194/104FR 4822 219 10725
VR450/39, VR600/39, VR605/39	

GB

For chapters 2 and 4 reference is made to the Service Manual of QUEEN volume **4822 726 15512**.

D

Für die Kapiteln 2 und 4 siehe Service Manual QUEEN volume **4822 726 15511**.

NL

Voor de hoofdstuk 2 en 4 wordt verwezen naar de Service Documentatie van de QUEEN volume **4822 726 15514**.

F

Pour ce qui est des chapitres 2 et 4 veuillez vous référer à la Documentation Service du QUEEN volume **4822 726 15513**.

I

Per i capitoli 2 e 4 veda il Manuale di Servizio di QUEEN volume **4822 726 15515**.

E

Para los capítulos 2 y 4 véase el manual de servicio de QUEEN volume **4822 726 15516**.

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen identiek aan de gespecificeerde worden toegepast.

Le prescrizioni di sicurezza richiedono che l'apparecchio sia ricondotto alle condizioni originali e che siano usati ricambi originali.

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Gerätes darf nicht verändert werden. Für Reparaturen sind Originalersatzteile zu verwenden.

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

Las instrucciones de seguridad exigen que después de la reparación el aparato se encuentre en el estado original y que las piezas de reemplazo sean idénticas a las originales.



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This chapter should be used in conjunction with the Service Manual QUEEN volume VR171.

Deck parts replacement

Auxiliary tools for deck adjustment
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Lift
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Threading motor
Capstan motor
Pressure roller
Roller unit right
Roller unit left

Adjustments

Tape path
„Roller unit left; roller unit right“
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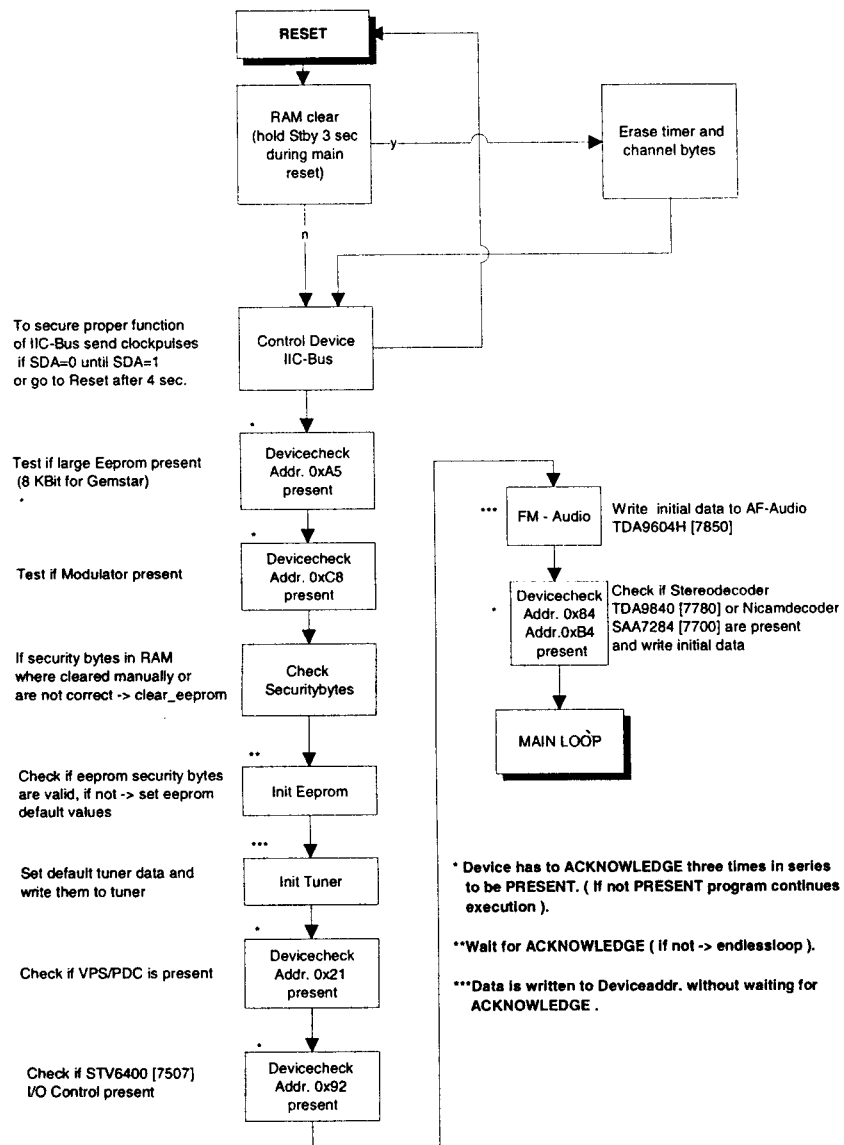
Features

	VR200/02	VR200/05	VR200/07	VR200/39	VR200/58	VR205/02	VR205/05	VR250/02	VR250/07	VR250/39	VR250/58	VR400/02	VR400/39	VR400/58	VR450/02	VR450/39	VR450/58	VR600/02	VR600/07	VR600/13	VR600/16	VR600/39	VR605/02	VR605/07	VR605/13	VR605/16	VR605/39	VR605/58	SB230/02	SB630/02	SB630/13	SB630/16
General																																
Low power standby [W]	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6
Backup of presets	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr
Backup of clock / timer	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs
Tuning presets	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
Number of events / month	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Systems																																
PAL BG	✓			✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
PAL I		✓	✓				✓		✓	✓			✓			✓			✓			✓		✓			✓					
SECAM BG				✓	✓					✓	✓		✓	✓		✓	✓					✓					✓	✓				
SECAM L, L'				✓						✓			✓			✓						✓					✓					
PAL-SECAM DK					✓						✓			✓			✓											✓				
Sound system: mono	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sound system: stereo																		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sound system: Nicam																		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cable tuner hyperband	✓	UHF	✓	✓	✓	✓	UHF	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Modulator Ch 21 - 55	Pal/G	Pal I	Pal I	-	Pal/G/K	Pal/G	Pal I	Pal/G	Pal I	-	Pal/G/K	Pal/G	-	Pal/G/K	Pal/G	-	Pal/G/K	Pal/G	Pal I	Pal/G	Pal/G	-	Pal/G	Pal I	Pal/G	Pal/G	-	Pal/G/K	Pal/G	Pal/G	Pal/G	Pal/G
Mechanism																																
Video heads:	2	2	2	2	2	2	2	2	2	2	2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
FM-audio heads (for stereo)																		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Rewind / Winding time E180 [sec]	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Tape lengths recognition automatic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Instant View	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tape counter: linear relative / time left	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
VISS: next/prev. index / blank tape search	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Features																																
Longplay [8 h]		✓	✓			✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Autosearch	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Follow TV (analog)				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Direct Record (analog)				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Plug & Play	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Studio Picture Control	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NTSC playback with PAL 60Hz TV				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Daily/weekly	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Show View (SV) / Video Plus+(V+)	SV	V+	V+	SV	SV	SV	V+	SV	V+	SV	SV	SV	SV	SV	SV	SV	SV	SV	V+	SV	SV	SV	SV	V+	SV	SV	SV	SV	SV	SV	SV	SV
OTR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
VPS+PDC (VPDC)	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC
Time (VPDC) Date (PDC) download	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Record-prepared mode (from SCART 2)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OSD	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Child lock						✓	✓	✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
VCR1/VCR2 selection								✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Continuous playback	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Audio dubbing	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
Connectors																																
Audio out: cinch (rear)								✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓
Audio / Video in: cinch (front)								✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓
Number of scart connectors	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Shuttle on front								✓	✓	✓	✓				✓	✓	✓						✓	✓	✓	✓	✓	✓			✓	✓

Survey of sets and PCB's with software versions

		AMB - MOTHERBOARD											-CINCH Board rear	-ACP10 CINCH Board front	-ASP10 Shuttle Board	-QNIC NICAM Board	Tape-Deck						
		-AMB layout -PS Power supply -HA Head amplifier -DE Deck electronics -DC Display control -VS Signal electronic -AL Audio linear -IO IN/OUT -VS-SEC Signal electronic -FV Frontend -AF Audio FM -OSD, FOME, VPS	µP - Versions														2 video heads, PAL, SECAM 2 video heads, longplay PAL 4 video heads, PAL, SECAM 4 video, 2 audio heads, PAL, SECAM						
			Deck Control-µP Pos. 7400	Display Control-µP Pos. 7201																			
Page 3 -	6 - 17	10	11											7/12	20	19	18	Chapter 4					
				ATDP4-xU	ADCM1-xP	ADCM2-xU	ADCM3-xU	ADCF1-xP	ADCF2-xU	ADCF3-xU	ADCH1-xP	ADCH2-xU	ADCH3-xU	ADCH4-xU	ADCH5-xU	CINCH rear	CINCH front	SHUTTLE	QNIC	WDQT-P2/0	WDQT-P2/0LP	WDQT-S4/0	WDQT-S4/2
VR200/02				✓		✓														✓			
VR200/05				✓	✓																✓		
VR200/07				✓	✓																✓		
VR200/39				✓		✓														✓			
VR200/58				✓			✓													✓			
VR205/02				✓		✓														✓			
VR205/05				✓	✓																✓		
VR250/02				✓					✓								✓	✓			✓		
VR250/07				✓				✓									✓	✓			✓		
VR250/39				✓					✓								✓	✓		✓			
VR250/58				✓						✓							✓	✓		✓			
VR400/02				✓		✓																✓	
VR400/39				✓		✓																✓	
VR400/58				✓			✓															✓	
VR450/02				✓					✓								✓	✓				✓	
VR450/39				✓					✓								✓	✓				✓	
VR450/58				✓						✓							✓	✓				✓	
VR600/02				✓							✓	✓				✓	✓						✓
VR600/07				✓							✓					✓	✓		✓				✓
VR600/13				✓											✓	✓	✓		✓				✓
VR600/16				✓									✓			✓	✓		✓				✓
VR600/39				✓								✓				✓	✓		✓				✓
VR605/02				✓								✓				✓	✓	✓					✓
VR605/07				✓							✓					✓	✓	✓	✓				✓
VR605/13				✓											✓	✓	✓	✓	✓				✓
VR605/16				✓									✓			✓	✓	✓	✓				✓
VR605/39				✓								✓				✓	✓	✓	✓				✓
VR605/58				✓										✓		✓	✓	✓	✓				✓
SB230/02				✓		✓														✓			
SB630/02				✓								✓					✓	✓					✓
SB630/13				✓											✓		✓	✓	✓				✓
SB630/16				✓									✓				✓	✓	✓				✓

Start - up software from the display control - µP



(GB)

TECHNICAL DATA

Mains voltage	Netzspannung
Mains frequency	Netzfrequenz
Power consumption:	Leistungsaufnahme:
without Low Power Standby	Standby
with Low Power Standby	Standby mit geringem Verbrauch
Ambient temperature	Raumtemperatur
Relative humidity	Relative Luftfeuchtigkeit
Dimensions	Abmessungen
Weight	Gewicht
Fast forward/rewind time (turbo)	Vor-/Rückspulzeit (turbo)
Position of use	Betriebslage
Video resolution	Video-Auflösung
Audio	Audio

(D)

TECHNISCHE DATEN

Mains voltage	Netzspannung
Mains frequency	Netzfrequenz
Power consumption:	Leistungsaufnahme:
without Low Power Standby	Standby
with Low Power Standby	Standby mit geringem Verbrauch
Ambient temperature	Raumtemperatur
Relative humidity	Relative Luftfeuchtigkeit
Dimensions	Abmessungen
Weight	Gewicht
Fast forward/rewind time (turbo)	Vor-/Rückspulzeit (turbo)
Position of use	Betriebslage
Video resolution	Video-Auflösung
Audio	Audio

(F)

CARACTERISTIQUES

Tension secteur	220 - 240 V, +/- 10%
Fréquence	45 - 65 Hz
Puissance absorbée:	mono 12.5 W during operation
.....	HiFi 16 W during operation
.....	mono 9.5 W
.....	HiFi 11 W
mode veille normal	mode veille faible consommation
.....	< 6 W standby
.....	+10°C to +35°C
Température ambiante	Humidité relative
.....	20 - 80 %
Encombrement	380 x 260 x 94 mm
Poids	3.7 kg
Temps (re-)bobinage (turbo)	typ. 100s (E180 cass.)
Position d'emploi	horizontalement, max. 15°
Puissance absorbée	≥240 lines
Audio SP: Linear Audio	80Hz - 10kHz (≤8dB)
Audio LP: Linear Audio	80Hz - 5kHz (≤8dB)
Stereo FM Audio	20Hz - 20kHz (≤3dB)

(NL)

TECHNISCHE GEGEVENS

Netspanning	Tensión de red
Netfrequentie	Frecuencia de red
Opgenomen vermogen:	Consumo de potencia:

(E)

DATOS TECNICOS

Netspanning	Tensión de red
Netfrequentie	Frecuencia de red
Opgenomen vermogen:	Consumo de potencia:

(I)

DATI TECNICI

Tensione di alimentazione	220 - 240 V
Frequenza di rete	45 - 65 Hz
Potenza assorbita:	mono 12.5 W during operation
.....	HiFi 16 W during operation
.....	mono 9.5 W during standby
.....	HiFi 11 W during standby
in attesa non a basso consumo	in attesa a basso consumo
.....	< 6 W standby
.....	+10°C to +35°C
Temperatura ambiente	Umidità relativa
.....	20 - 80 %
Dimensioni	380 x 260 x 94 mm
Peso	3.7 kg
Tempo di (ri-)avvolgimento (turbo)	typ. 100s (E180 cass.)
Posizione di funzionamento	horizontally, max. 15°
Risoluzione video	≥240 lines
Audio SP: Linear Audio	80Hz - 10kHz (≤8dB)
Audio LP: Linear Audio	80Hz - 5kHz (≤8dB)
Stereo FM Audio	20Hz - 20kHz (≤3dB)

Euroconnector (AV1) SCART plug 1

Connection to TV, monitor, projection TV ...

Pin 1 ARO (audio right out)	500 mV _{rms} +/- 3 dB	R _{out} 1 kOhm
Pin 2 ARI (audio right in)	0.2 V _{rms} to 2 V _{rms}	R _{in} 10 kOhm
Pin 3 ALO (audio left out)	500 mV _{rms} +/- 3 dB	R _{out} 1 kOhm
Pin 6 ALI (audio left in)	0.2 V _{rms} to 2 V _{rms}	R _{in} 10 kOhm
Pin 7 Blue (out) **)		
Pin 8 Switching output:	(with R _{load} = 10kOhm, C _{load} < 2nF)	
.....	low: 2 V	
.....	high: 9.5 V	
.....	rise time: 5 ms	

Pin 11 Green (out) **)

Pin 15 Red (out) **)

Pin 16 Blanking (out) **)

loop through enabled during standby, view-mode

Pin 19 CVBS II (video out) 1 V_{rms} +/- 2dB R_{out} 75 Ohm

Pin 20 CVBS I (video in) 1 V_{rms} +/- 3dB R_{in} 75 Ohm

** passive loop through from AV2

Euroconnector (AV2) SCART plug 2

Connection to decoder, SAT tuner, video disc, 2nd VCR ...

Pin 1 ARO (audio right out)	500 mV _{rms} +/- 3 dB	R _{out} 1 kOhm
Pin 2 ARI (audio right in)	0.2 V _{rms} to 2 V _{rms}	R _{in} 10 kOhm
Pin 3 ALO (audio left out)	500 mV _{rms} +/- 3 dB	R _{out} 1 kOhm
Pin 6 ALI (audio left in)	0.2 V _{rms} to 2 V _{rms}	R _{in} 10 kOhm
Pin 7 Blue (in) *)		
Pin 8 Switching input only	low: 2 V (low)	R _{in} 10 kOhm
.....	high: 4.5 V (high)	R _{in} 10 kOhm

Pin 11 Green (in) *)

Pin 15 Red (in) *)

Pin 16 Blanking (in) *)

loop through enabled during standby, view-mode

Pin 19 CVBS II (video out) 1 V_{rms} +/- 2dB R_{out} 75 Ohm

Pin 20 CVBS I (video in) 1 V_{rms} +/- 3dB R_{in} 75 Ohm

*) passive loop through to Euroconnector AV1

Cinch Audio/Video input on front panel (OPTION)

Audio:	
AINFR (audio right in) red	0.2 V _{rms} to 2 V _{rms} typ. 500 mV _{rms}
AINFL (audio left in) white	0.2 V _{rms} to 2 V _{rms} typ. 500 mV _{rms}
Input impedance	47 kOhm

Video:	
VFR yellow	1 V _{rms} +/- 3 dB
Input impedance	75 Ohm

Cinch Audio Out Rear (OPTION)

AOUT1R (audio right out) red	500 mV _{rms} +/- 3 dB R _{out} 1 kOhm
AOUT1L (audio left out) white	500 mV _{rms} +/- 3 dB R _{out} 1 kOhm

This outputs are in parallel with the corresponding outputs on Euroconnector 1.

TUMOD

Modulator:	
Frequency range loop through	45 MHz - 860 MHz
Gain: ANT IN - TV OUT	2 dB + 3 / - 2 dB
ANT IN - TUN OUT	2 dB + 3 / - 2 dB
Switch for RF input attenuation	NO
Frequency range out (tuned by IIC bus) Ch 21 - Ch55	

Tuner:	
Frequency range	43 MHz - 860 MHz
for UK	450 MHz - 860MHz

Input voltage max.	< 100 dBµV
min.	> 60 dBµV

Safety instructions

- Safety regulations demand that the set be restored to its original condition and that components identical with the original types be used.
- Safety components are marked by the symbol 
- All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair may reduce life drastically. When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools on the same potential.
- A set to be repaired should always be connected to the mains via a suitable isolating transformer.
- Never replace any modules or any other parts while the set is switched on.
- Use plastic instead of metal alignment tools. This in order to prelude short-circuit or to prevent a specific circuit from being rendered unstable.

Remarks

- The direct voltages and oscillograms ought to be measured relative to the set mass.
- EXCEPTION
At the power supply, the DC voltages and the oscillograms at the primary side are measured to LIVE GND.
- The direct voltages and oscillograms mentioned in the diagrams ought to be measured with a colour bar signal and the picture carrier at 503.25 MHz (C25).
- The oscillograms and direct voltages have been measured in RECORD or PLAY mode.
- The semiconductors, which are mentioned in the circuit diagram and in the parts lists, are fully exchangeable per position with the semiconductors in the set, irrespective of the type designation of these semiconductors.

Sicherheitshinweise

- Die Sicherheitsvorschriften erfordern es, daß sich das Gerät nach der Reparatur in seinem originalen Zustand befindet und daß die zur Reparatur benutzten Ersatzteile mit den Originalersatzteilen identisch sind.
- Sicherheits-Bauteile sind mit der Markierung  versehen
- Alle IC's und Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD). Unvorschriftsmäßige Behandlung von Halbleitern im Reparaturfall kann zur Zerstörung dieser Bauteile oder zu einer drastischen Reduzierung der Lebensdauer führen. Sorgen Sie dafür, daß Sie sich im Reparaturfall über ein Armband mit Widerstand auf dem gleichen Potential, wie die Masse des Gerätes befinden. Alle Bauteile, Werkzeuge und Hilfsmittel sind auf das gleiche Potential zu legen.
- Ein zu reparierendes Gerät ist immer über einen Trenntransformator an die Netzspannung anzuschließen.
- Bei eingeschaltetem Gerät dürfen keine Module oder sonstige Einzelteile ausgetauscht werden.
- Zum Abgleich sind ausschließlich Kunststoffwerkzeuge zu benutzen (keine Metallwerkzeuge verwenden). Dadurch wird vermieden, daß ein Kurzschluß entstehen kann oder eine Schaltung instabil wird.

Anmerkungen

- Die Gleichspannung und Oszillogramme sind gegen Gerätemasse zu messen.
- AUSNAHME
Beim Netzteil sind die Gleichspannungen und Oszillogramme auf der Primärseite gegen Live GND gemessen.
- Die Gleichspannungen und Oszillogramme angeführt in den Schaltbildern sollen unter folgenden Bedingungen gemessen werden: Farbbalkensignal, Bildträger auf 503.25 MHz (C25)
- Die Oszillogramme und Gleichspannungen sind in RECORD oder PLAY gemessen. Die in den Stücklisten aufgeführten Bauteile sind positionsweise voll austauschbar gegen die Bauteile in dem Gerät, ungeachtet der etwaigen Typenbezeichnungen.

Avertissements

- Les normes de sécurité exigent qu'après réparation l'appareil soit remis dans son état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.
- Les composants de sécurité sont marqués 
- Tout les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharger statiques (ESD). Leur longévité pourrait être considérablement écourté par le fait qu'aucune précaution n'est prise à leur manipulation. Lors de réparations s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité. Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.
- Toujours alimenter un appareil à réparer à travers un transto d'isolement.
- Ne jamais remplacer les modules ni d'autres composants quand l'appareil est sous tension.
- Pour l'ajustage, utiliser des outils en plastique au lieu d'instruments métalliques. Ceci afin d'éviter les court-circuits et exclure l'instabilité dans certains circuits.

Observations

- La mesure des tensions continues et des oscillogrammes doit se faire par rapport à la terre de l'appareil.
- EXCEPTION
Sur l'unité d'alimentation la tension continue et l'oscillogramme sont mesurés sur le côté primaire en Live GND.
- La mesure des tensions continues et des oscillogrammes figurant sur le schéma doit se faire dans un signal de barre couleur porteuse image sur 503.25 MHz (C25).
- Les oscillogrammes et tension sont mesurées en mode RECORD ou PLAY.
- Les semi-conducteurs indiqués dans le schéma de principe et à la liste des composants, sont interchangeableables par repère sur ce chassis avec les semi-conducteurs de l'appareil quelle que soit la désignation de type donnée sur ces semi-conducteurs.

Veiligheidsinstructies

- Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, indientek aan de oorspronkelijke, worden toegepast.
- De veiligheidsonderdelen zijn aangeduid met het symbool 
- Alle IC's en vele andere halfgeleiders zijn gevoelig voor elektrostatische ontladingen (ESD). Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor, dat U tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat. Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.
- Sluit een apparaat dat gerepareerd wordt altijd via een scheidingstransformator aan op de netspanning.
- Verwissel nooit modules of andere onderdelen terwijl het apparaat is ingeschakeld.
- Gebruik voor het afregelen plastic i.p.v metalen gereedschap. Dit om mogelijke kortsluiting te voorkomen of een bepaalde schakeling instabiel te maken.

Opmerkingen

- De gelijkspanningen en oscillogrammen dienen gemeten te worden ten opzichte van de apparaat aarde.
- De gelijksspanningen en oscillogrammen vermeld in de schema's dienen gemeten te worden met een kleurbalkensignaal beelddraaggolp op 503.25 MHz (C25).
- De oscillogrammen en gelijksspanningen zijn in RECORD of PLAY mode gemeten.
- De halfgeleiders, die in het pricipeschema en in de stuklijsten, zijn vermeld, zijn per positie volledig uitwisselbaar met de halfgeleiders in het apparaat, ongeacht de typeaanduiding op deze halfgeleiders.

Avvertimenti

- Le prescrizioni di sicurezza richiedono che l'apparecchio sia ricondotto alle condizioni originali e che siano usati ricambi originali.
- Componenti di sicurezza sono marcati con 
- Tutti gli IC e semiconduttori sono sensibili a scariche elettrostatiche (ESD). Noncuranze durante la riparazione di semiconduttori possono danneggiarli o condurre ad una riduzione drastica della durata. Durante la riparazione assicurarsi di essere collegati allo stesso potenziale attraverso un bracciale di protezione contro scariche elettrostatiche. Inoltre tenere anche tutti i componenti e gli attrezzi a questo potenziale.
- Apparecchi da riparare bisogna collegarli sempre via un trasformatore isolante (separatoro) alla tensione normale.
- Non scambiare moduli o altri componenti quando l'apparecchio è in funzione.
- Per l'accordo usare soltanto attrezzi di plastica (non usare attrezzi metallici). Così si evitano cortocircuiti e collegamenti instabili.

Osservazioni

- Misurare le tensioni continue e gli oscillogrammi riferendosi alla massa dell'apparecchio.
- ECCEZIONE
Le tensioni continue e gli oscillogrammi dall'alimentatore sono misurati sulla parte primaria contro GND-Live.
- Le tensioni continue e gli oscillogrammi indicati negli schemi di collegamento devono essere misurati secondo le condizioni seguenti: segnale barre colore, portante dell'immagine su: 503.25 MHz (C25).
- Gli oscillogrammi e le tensioni continue sono misurati in RECORD o PLAYBACK.
- I componenti indicati nelle liste sono intercambiabili con quelli nell'apparecchio nonostante l'eventuale denominazione di modelli.

 WARNING FOR LITHIUM BATTERIES!

Lithium batteries, if incorrectly used (excessive heat, wrong connection of terminals, short circuit represent a danger of explosion!
Lithium batteries must be replaced only by original spare parts.

 WARNHINWEIS ZU LITHIUM-BATTERIEN!

Bei fäscher Handhabung (Überhitzung, Falschpolung oder Kurzschluß) der Lithium-Batterien besteht Explosionsgefahr! Lithium-Batterien dürfen nur gegen Originalersatzteile getauscht werden.

 ATTENTION!

Pile au lithium.
Danger d'explosion si traitée incorrectement. Ne peut être remplacée que par un spécialiste (comme décrit dans les instructions de réparation).

 OPGELET MET LITHIUM-BATTERIJEN!

Bij foutieve behandeling (oververhitting, foutieve poling of kortsluiting) van lithium-batterijen bestaat er explosiegevaar! Lithium-batterijen mogen slechts door originele onderdelen vervangen worden.

Avisos

- Las instrucciones de seguridad exigen que después de la reparación el aparato se encuentre en el estado original y que las piezas de repuesto, utilizadas para la reparación, sean idénticas a las originales.
- Los componentes de seguridad estan marcados con 
- Todos los IC y semiconductores son sensibles a descargas electrostáticas (ESD). Un tratamiento no conforme a las instrucciones de semiconductores en caso de reparación, podría llevar a la destrucción de estos componentes, o a una reducción drástica de la duración. Tenga cuidado de que, en caso de reparación, estar al mismo potencial que la masa del aparato, por una pulsera con resistencia. Ponga todos los componentes, herramientas y recursos al mismo potencial.
- Para reparar un aparato hay que conectarlo siempre a la alimentación a traves de un transformador de aislamiento.
- Cuando un aparato está en marcha no pueden ser cambiados módulos u otras piezas de repuesto.
- Para los ajustes hay que utilizar exclusivamente herramientas de plástico (nunca herramientas metálicas). Así se evitan cortocircuitos y circuitos inestables.

Notas

- Hay que medir las tensiones continuas y los oscilogramas contra la masa del aparato.
- UITZONDERING:
Bij het netgedeelte zijn de gelijkspanningen en oscillogrammen aan de primaire kant tegen Live GND gemeten.
- Las tensiones continuas y los oscilogramas mencionados en los esquemas tienen que ser medidos de manera siguiente: señal barra de color portadora de imagen en 503.25MHz (C25)
- Los oscilogramas y las tensiones continuas son medidas en „RECORD“ y „PLAYBACK“
- Los componentes mencionados en las listas se los puede cambiar por los componentes en el aparato, a pesar de eventuales designaciones de tipos.

 ATTENZIONE CON LE PILE AL LITIO!

In caso di utilizzo errato (surriscaldamento, errata posizione dei poli o cortocircuito) delle pile al litio consiste pericolo di esplosione! Le pile al litio si possono sostituire solo con pezzi di ricambio originali.

 AVISO!

Bateria de litio.
Por una inadecuada intervención puede explotar. Solo debe ser cambiada por una persona con conocimientos técnicos (como en la guía de reparación se describe).

 ADVARESL!

Lithium batteri. Eksplosionsfare.
Udskiftning må kun foretages af en sagkyndig, og som beskrevet in servicemanualen.

 VARNING!

Eksplosionsfara vid felaktigt batteritype!
Använd samma batterityp eller ekvivalent typ som rekommenderas av apparattillverkaren.

 VAROITUS!

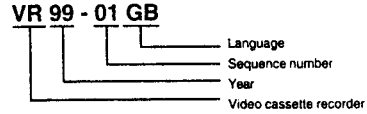
Paristo voi räjähtää, jos se on virheellisesti asennettu!
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin.

Modifications

Description of the system used for publishing modification data and supplements to the service manual.

All modification data and supplements to the Service Manual are published by means of Service Information bulletins.

Each Service information has a number, for example :



A Service Information bulletin consists of a front sheet, as the case may be followed by supplementary and/or replacement sheets.

Replacement sheets serve to replace existing sheets in the Service Manual. These sheets are identified by an additional letter after the page number, for example 5-1a. Page 5-1a then takes the place of page 5-1.

Supplementary sheets are inserted between the existing sheets in the Service Manual. These sheets can be identified by an additional figure following the page number, for example 5-1-1.

Sheet 5-1-1 should be inserted after page 5-1.

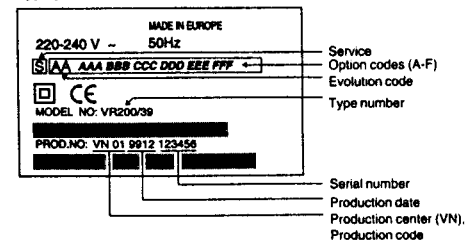
Description of the system by means of which modifications are indicated in the recorder.

All important parts of the recorder, such as tape deck, p.c. boards and modules, are provided with a sticker. These stickers specify a number of product data. The meaning of this data will now be explained for the most important sections.

The complete recorder

The type plate is located at the back of the recorder, below an example of such a type plate is given.

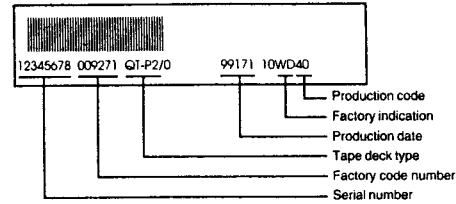
Type plate :



Note :

- In the case of an important modification to the recorder the production code on the type plate is increased by one. E.g. 01 becomes 02.
- In the case of an important modification to the service documentation the evolution code on the type plate is increased by one. E.g. AA becomes AB.

Tape deck



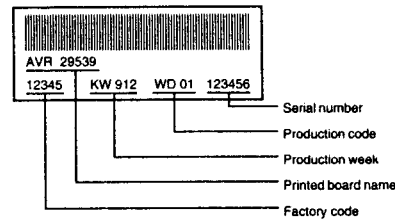
Note :

The production code and the serial number on the tape deck need not correspond to the production code and the serial number on the type plate.

Printed panels

The stickers are generally located on the track side of the module.

Example :



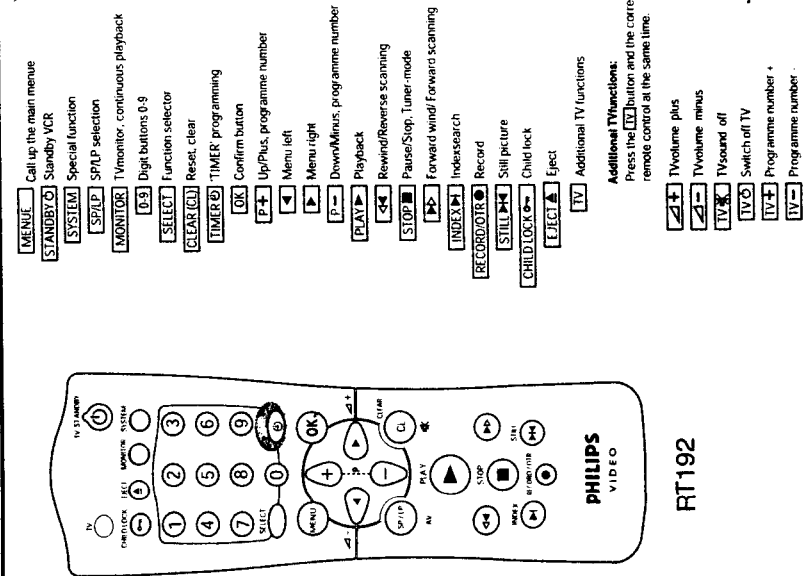
Remarks :

The production code number will not always be mentioned.

In case of an important modification, the last figure of the factory code number (point number) is increased by one. E.g. 6635.1 becomes 6635.2.

OPERATING INSTRUCTIONS IN BRIEF

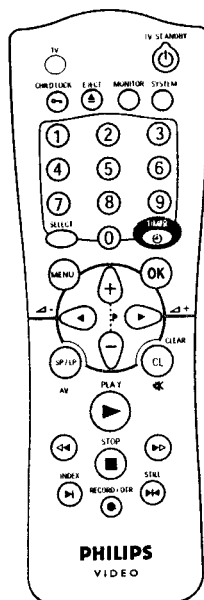
The remote control



RT192

OPERATING INSTRUCTIONS IN BRIEF

The remote control



RT192

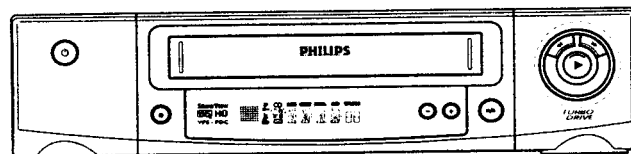
MENUE	Call up the main menu
STANDBY	Standby VCR
SYSTEM	Special function
SP/LP	SP/LP selection
MONITOR	TVmonitor, continuous playback
0-9	Digit buttons 0-9
SELECT	Function selector
CLEAR (CL)	Reset, clear
TIMER	'TIMER' programming
OK	Confirm button
P+	Up/Plus, programme number
←	Menu left
→	Menu right
P-	Down/Minus, programme number
PLAY	Playback
←	Rewind/Reverse scanning
STOP	Pause/Stop, Tuner mode
→	Forward wind/ Forward scanning
INDEX	Indexsearch
RECORD/OTR	Record
STILL	Still picture
CHILD LOCK	Child lock
EJECT	Eject
TV	Additional TV functions

Additional TVfunctions:
Press the **TV** button and the correct button on the remote control at the same time.

TV+	TVvolume plus
TV-	TVvolume minus
TV*	TVsound off
TV	Switch off TV
TV+	Programme number +
TV-	Programme number -

Front of the video recorder

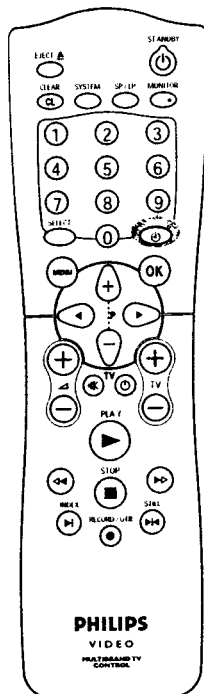
STANDBY	Standby
RECORD	Record
PROGRAMME -	Down/Minus, number
PROGRAMME +	Up/Plus, number
PLAY	Playback
STOP/EJECT	Stop/Cassette eject
←	Rewind/Reverse scanning
→	Forward wind/ Forward scanning



VR205, SB230

OPERATING INSTRUCTIONS IN BRIEF

The remote control



RT193

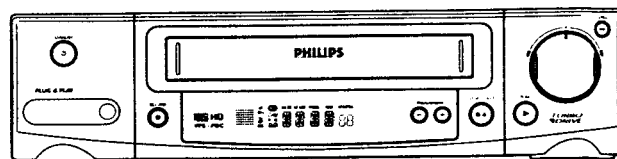
MENUE	Call up the main menu
STANDBY	Standby VCR
SYSTEM	Special function
SP/LP	SP/LP selection
MONITOR	TVmonitor, continuous playback
0-9	Digit buttons 0-9
SELECT	Function selector
CLEAR (CL)	Reset, clear
TIMER	'TIMER' programming
OK	Confirm button
P+	Up/Plus, programme number
←	Menu left
→	Menu right
P-	Down/Minus, programme number
PLAY	Playback
←	Rewind/Reverse scanning
STOP	Pause/Stop, Tuner mode
→	Forward wind/ Forward scanning
INDEX	Indexsearch
RECORD/OTR	Record
STILL	Still picture
EJECT	Eject

Additional TVfunctions:

TV+	TVvolume plus
TV-	TVvolume minus
TV*	TVsound off
TV	Switch off TV
TV+	Programme number +
TV-	Programme number -

Front of the video recorder

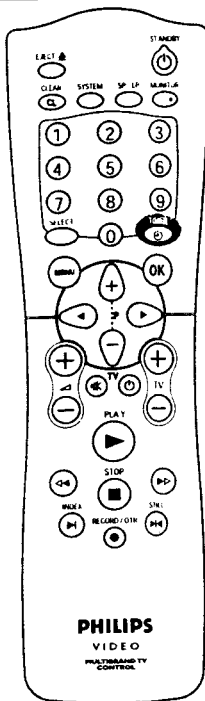
STANDBY	Standby
RECORD	Record
PROGRAMME -	Down/Minus, number
PROGRAMME +	Up/Plus, number
PLAY	Playback
STOP/EJECT	Stop/Cassette eject
SHUTTLE ON/ STILL	Still picture
←	Rotary control for Rewind/Reverse scanning or Forward wind/ Forward scanning



VRx50, SB630

OPERATING INSTRUCTIONS IN BRIEF

the remote control



RT193

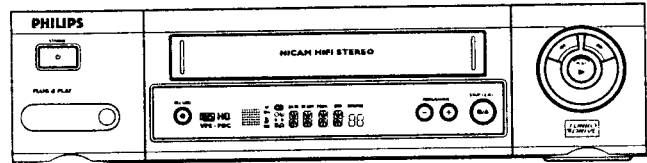
- MENU** Call up the main menu
- STANDBY** Standby VCR
- SYSTEM** Special function
- SP/LP** SP/LP selection
- MONITOR** TVmonitor, continuous playback
- 0-9** Digit buttons 0-9
- SELECT** Function selector
- CLEAR (CL)** Reset, clear
- TIMER** TIMER programming
- OK** Confirm button
- P+** Up/Plus, programme number
- Menu left**
- Menu right**
- P-** Down/Minus, programme number
- PLAY** Playback
- ◀** Rewind/Reverse scanning
- STOP** Pause/Stop, Tuner mode
- ▶** Forward wind/ Forward scanning
- INDEX** Indexsearch
- RECORD/OTR** Record
- STILL** Still picture
- EJECT** Eject

Additional TVfunctions:

- TV+** TVvolume plus
- TV-** TVvolume minus
- TV** TVsound off
- TV** Switch off TV
- TV+** Programme number +
- TV-** Programme number -

Front of the video recorder

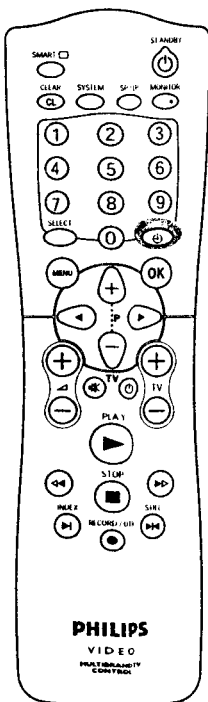
- STANDBY** Standby
- RECORD** Record
- PROGRAMME -** Down/Minus, number
- PROGRAMME +** Up/Plus, number
- PLAY** Playback
- STOP/EJECT** Stop/Cassette eject
- ◀** Rewind/Reverse scanning
- ▶** Forward wind/ Forward scanning



VR600

OPERATING INSTRUCTIONS IN BRIEF

the remote control



RT 194

- MENU** Call up the main menu
- STANDBY** Standby VCR
- SYSTEM** Special function
- SP/LP** SP/LP selection
- MONITOR** TVmonitor, continuous playback
- 0-9** Digit buttons 0-9
- SELECT** Function selector
- CLEAR (CL)** Reset, clear
- TIMER** TIMER programming
- OK** Confirm button
- P+** Up/Plus, programme number
- Menu left**
- Menu right**
- P-** Down/Minus, programme number
- PLAY** Playback
- ◀** Rewind/Reverse scanning
- STOP** Pause/Stop, Tuner mode
- ▶** Forward wind/ Forward scanning
- INDEX** Indexsearch
- RECORD/OTR** Record
- STILL** Still picture
- SMART** Smart picture

Additional TVfunctions:

- TV+** TVvolume plus
- TV-** TVvolume minus
- TV** TVsound off
- TV** Switch off TV
- TV+** Programme number +
- TV-** Programme number -

Front of the video recorder

- STANDBY** Standby
- RECORD** Record
- PROGRAMME -** Down/Minus, number
- PROGRAMME +** Up/Plus, number
- PLAY** Playback
- STOP/EJECT** Stop/Cassette eject
- SHUTTLE ON/ STILL** Still picture
- ◀** Rotary control for Rewind/Reverse scanning or Forward wind/ Forward scanning



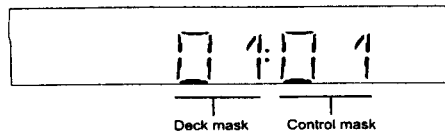
VR605

PCS 94142 GB

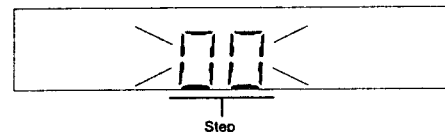
2.4 Description of steps with modes:

Step 00: Display of mask version number

After activating the service test program, step 00 and the mask version number are automatically displayed.



The mode can be left again by pressing the SELECT key on the remote control. The currently selected position number appears and flashes on the display.



A step between 00 and 99 can now be selected.

Step 01: Checking the drive positions

By pressing the SELECT key whilst Step 01 is flashing, the drive position appears on the display. The FTA signal from the photoelectric barriers which controls the revolutions of the loading motor is used to check the drive condition.

The drive position is shown as a 3-digit decimal number by counting the FTA pulses on the display.

(e.g. 213 = Play)

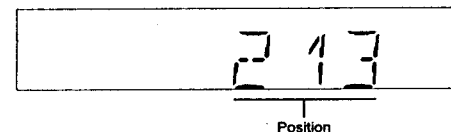


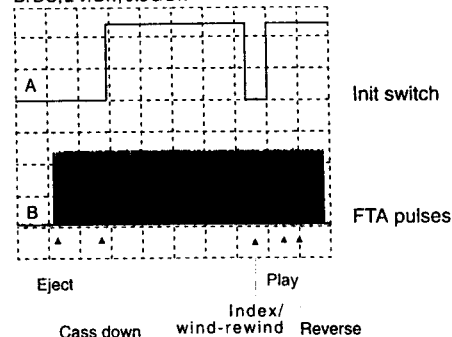
Table of drive positions:

Status	Position (FTA dec)
Eject	007 +2/-2
Index	191 +0/-2
Stop	200 +4/-4
Play	213 +4/-4
Reverse	237 +2/-0

Function of the Init switch:

The diagram shows the function of the Init switch, depending on the position of the deck. The number of FTA pulses is important for the position of the drive.

A: DC, 2 V/Div, 0.5 s/Div
B: DC, 2 V/Div, 0.5 s/Div



Step 02: Display of the deck error codes

By pressing the SELECT key whilst Step 02 is flashing, the deck error code is shown on the display.

Checking the drive function Loading and unloading time

The signal (FTA) of the photoelectric barrier which controls the revolutions of the loading motor is used as a reference for the loading and unloading time.

Stopping of supply or take-up reels

The tacho signals of the left (WTL) and right (WTR) winding disks are used as control reference.

Stopping of head drum motor

This is monitored with the PG/FG signal. The signal is discharged from the e.m.f. of the non-conducting spools of the head cylinder motor, showing the position of the head cylinder.

Capstan motor fault

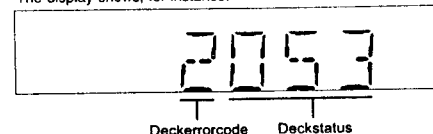
This is monitored with the FGD signal.

If one of the above sensor signals is not available, the recorder tries to put the lift into the "EJECT" position.

Explanation of deck error codes and deck error status

The last error code is stored and remains in the EEPROM, even if the recorder is disconnected from the mains. The error code can be **erased** by pushing the CLEAR button on the remote control.

The display shows, for instance:



The left digit shows the error:
(e.g.: Error 2 = Capstan error)

Error table:

0	no error
1	threading error
2	no capstan pulses
3	tape broken
4	no pulses left reel
5	no pulses right reel
6	head motor error

The 3 digits on the right represent the deck error condition:
(e.g.: 053 = during Play)

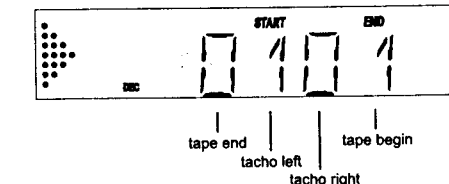
Functiontable:

012 Standby	114 VISS write	211 Slowmotion 1/24
014 Autotracking	115 Viss erase	212 " " 1/14
031 Play-3	125 Tuner - Stopout	215 " " 1/7
034 Slow_reverse	126 Auto Remain Funct.	216 " " 1/2
041 Still Picture	130 ATTS Function	217 " " -1/24
042 Fast	168 Frame+	218 " " -1/14
044 Play-9	169 Frame-	219 " " -1/7
045 Eject	170 Play-11	220 " " -1/2
046 Play9	171 Play-7	222 Edit Record
047 Play-1	172 Play-5	223 Align of Gap
048 Pause	173 Play5	238 Pause
050 Rewind	174 Play7	239 SPC align
052 Wind	175 Play11	248 Edit Pause
053 Play	196 Tuner - Eject	247 Slow motion 1/10
054 Stop out	197 Standby Eject	248 " " 1/18
055 Record	199 Audio Dubbing	249 " " -1/10
112 Index next	202 Audio Dubb. Pause	250 " " -1/18
113 Index previous	206 Reset Tapecounter	253 Key Released

The error code can be reset in this step with the CLEAR key.

Step 03: Deck sensors and manual tracking

By pressing the SELECT key whilst step 03 is flashing, the deck sensors will be displayed in one digit as either 1 or 0.



■ ● ◀ ▶ are used to display the deck status.
START init switch (INIT)
END record protection (RECP)
DEC Loading pulses (FTA)

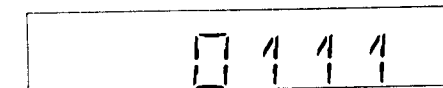
In the service test program, the tracking is always in the centre position.

Only in this step can the value for the required tape running setting be changed, manually in the PLAY function with the UP / DOWN keys.

After leaving the mode with the SELECT key, the tracking value always resets itself to the centre position and cannot be changed.

Step 04: Display of the operating hours counter:

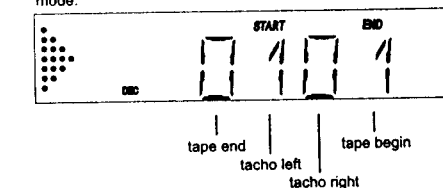
By pressing the SELECT key whilst step 04 is flashing, the operating hours counter shows how many hours the head disk has turned. The hours are displayed as a 4-digit decimal number.



Step 10: Operation without drive - dummy mode

Before activating this mode with the SELECT key, the recorder must be in the EJECT position.

Enter the mode by pressing the SELECT key. The motors are then switched off and the sensors will be ignored by the deck microprocessor. The drive can now be dismantled from the motherboard (see dismantling instructions). **Only install drive if recorder is disconnected from mains.** For signal tracking, the recorder can be set to all drive conditions, i.e. signal electronics, audio and IO processing are switched to the respective operating mode.

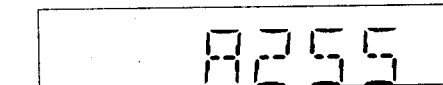


■ ● ◀ ▶ are used to show the deck status
START init switch (INIT)
END record protection (RECP)
DEC loading pulses (FTA)

Step 40: Option code input

If a new EEPROM is installed in the course of repairs, it must be initialised.

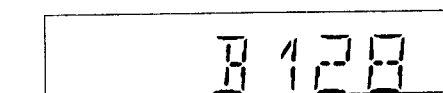
By pressing the SELECT key whilst step 40 is flashing, the decimal option A appears in the display.



By entering a 3-digit decimal code, the correct features are set. **These codes are shown on the type-plate of the recorder.** After pressing the OK key on the remote control, the entered code is saved. The display shows OK for approx. 3 sec. and then the stored value in decimal format.

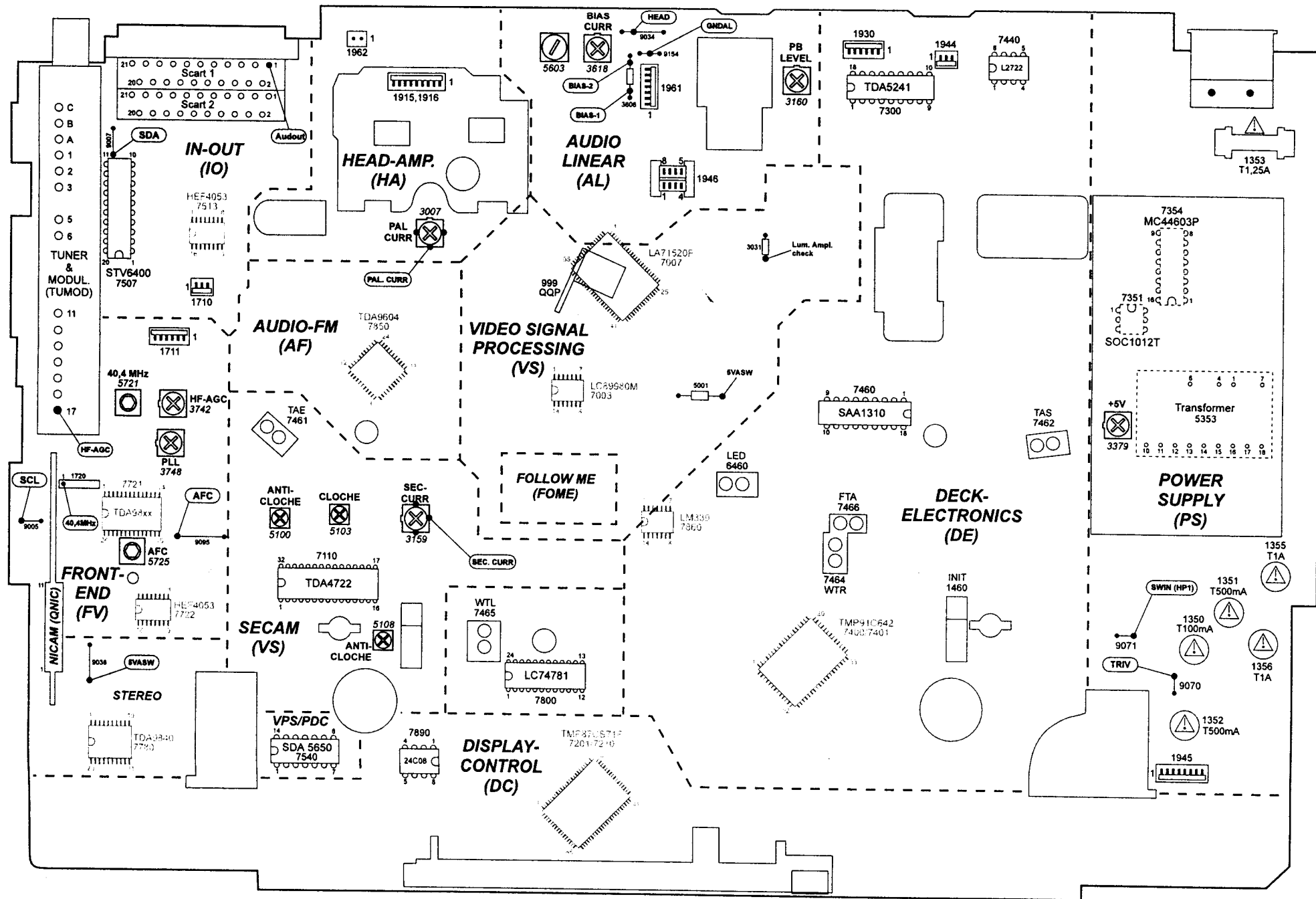


By pressing the UP and DOWN keys, the available options (A to F) can be selected. The display shows the last stored value in decimal format.



In case of an invalid entry (value >255) the activation of the OK key causes the content of the last stored option to be displayed and OK does not appear in the display.

Depending on the model, some bits are software or default protected and cannot be changed by an entry. In this case, the display shows OK, but the display returns to the **default value**.



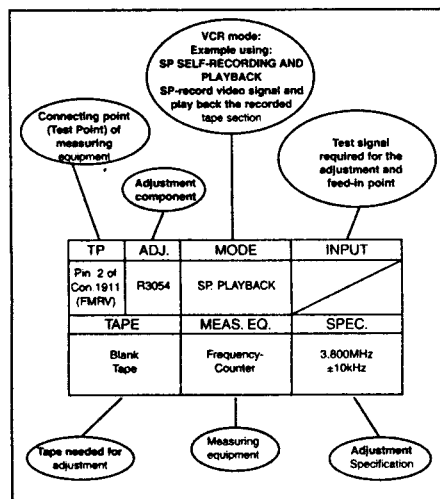
ADJUSTMENT INSTRUCTIONS

For adjustment instructions in D, F, NL, I or E language, to refer service manual of QUEEN volume 4822 726 15511 till 15516.

Test equipment:

- Dual-trace oscilloscope
Voltage range : 0.001 ~ 50 V/div
Frequency : DC ~ 50 MHz
Probe : 10:1, 1:1
- DVM (Digital voltmeter)
- Frequency counter
- Sinus generator
Sinus : 0 ~ 50 MHz
- Test pattern generator
- VHS Alignment Tape 4822 397 30103
SPC Alignment Tape 4822 397 30268

How to read the adjustment procedures:



1. Power supply - AMB (PS)

Service tasks after repairing the power supply:

1.1 Setting the output voltage +5VASW [3379]:

Purpose: To set the correct supply voltage.

Symptom, if incorrectly set:
VCR functions are not operating correctly.

TP	ADJ.	MODE	INPUT
wire +5VASW	R3379	Playback	
TAPE	MEAS. EQ.	SPEC.	
Any tape	DC Voltmeter	5.3V ±0.03V	

2. Video signal processing-AMB (VS,AL,I/O)

Service tasks after replacement of ICs 7007, 7110:

Purpose: To set the optimum record PAL or SECAM chroma level.

Symptom, if incorrectly set:

If the record level is too high, beats may appear on the picture. If the level is too low, the colour may be degraded.

Before commencing adjustment:

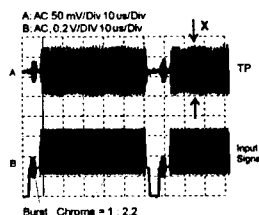
Call the service test program and enter Step 10 (Dummy mode). Remove the drive from the motherboard. Control the luminance amplitude on TP R3031:

TP	ADJ.	MODE	INPUT
Pos. R3031 (emitter side)		Dummy mode Record Preset E1	(VIDEO IN E1) Red Picture PAL 75% Saturation
TAPE	MEAS. EQ.	SPEC.	
Blank Tape	Oscilloscope Video Pattern Generator	420 mV _{pp} ± 40 mV _{pp}	

2.1 PAL chrominance record current adjustment [3007]:

Connect resistor R3031 on the emitter side (T7006) with 5VASW of coil L5001.

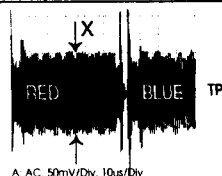
TP	ADJ.	MODE	INPUT
Pos. R3007 (slider)	R3007	Dummy mode Record Preset E1	(VIDEO IN E1) Red Picture PAL 75% Saturation
TAPE	MEAS. EQ.	SPEC.	
Blank Tape	Oscilloscope Video Pattern Generator	X=160 ± 20 mV _{pp} for 2 heads VCR X=130 ± 20 mV _{pp} for 4 heads VCR	



2.2 SECAM chrominance record current adjustment [3159]:

Connect resistor R3031 on the emitter side (T7006) with 5VASW of coil L5001.

TP	ADJ.	MODE	INPUT
Pos. R3159 (slider)	R3159	Dummy mode Record of Preset E1	(VIDEO IN E1) Red Picture SECAM 75% Saturation
TAPE	MEAS. EQ.	SPEC.	
Blank Tape	Oscilloscope Video Pattern Generator	X=210 ± 30 mV _{pp} measured in red line	



3. Front End - AMB (VS, AL, I/O)

Service tasks after replacement of ICs 7720, 7721, coil L5725 and TUMOD:

3.1 AFC Adjustment:

Purpose: Correct adjustment of demodulator AFC - circuit

Symptom, if incorrectly set:
Bad or disturbed TV channel reception.

3.1.1 PAL - AFC adjustment [5725]:

TP	ADJ.	MODE	INPUT
IC 7720 Pin 15 (TP9095)	L5725	E to E	38,9MHz 500mV _{pp} at Tuner 1701 Pin 17
TAPE		MEAS. EQ.	SPEC.
		DC Voltmeter Freq. Generator	2,5V ±0,2V

3.1.2 PAL/SECAM - AFC adjustment [5725]:

TP	ADJ.	MODE	INPUT
IC 7721 Pin 20 (TP9095)	L5725	E to E	38,9MHz 500mV _{pp} at Tuner 1701 Pin 17
TAPE		MEAS. EQ.	SPEC.
		DC Voltmeter Freq. Generator	2,5V ±0,2V

3.2 SECAM band 1 - AFC adjustment [3748]: (SECAM L / L' only)

Before commencing adjustment:

-- Switch VCR to SECAM with SYSTEM key.

TP	ADJ.	MODE	INPUT
IC 7721 Pin 20 (TP9095)	R3748	E to E, SECAM L' tuned on this preset	33,9MHz 500mV _{pp} at Tuner 1701 Pin 17
TAPE		MEAS. EQ.	SPEC.
		DC Voltmeter Freq. Generator	2,5V ±0,2V

3.3 Phase offset adjustment [3748]: (TDA9800T only)

After replacement of the IC TDA9800T [7720], the potentiometer pos. 3748 has to be removed from the motherboard. The demodulator IC TDA9800T [7720] is automatically adjusted to a default value.

3.4 HF - AGC adjustment [3742]:

Service tasks after replacement of ICs 7720, 7721 or TUMOD:

Purpose: Set amplifier control.

Symptom, if incorrectly set:
Picture jitter if input level is too low and picture distortion if input level is too high.

TP	ADJ.	MODE	INPUT
Tuner 1701 Pin 17	R3742	Set tuned to channel 27	4,5mV(74dB _μ V) on aerial input PAL white picture, audio IF on, no modulation
TAPE		MEAS. EQ.	SPEC.
		Oscilloscope Video Pattern Generator	550mV _{pp} ±50mV (use a 10:1 probe)

3.5 Attenuating the 40.4 MHz [5721]: (SECAM only)

Service tasks after replacement of coil 75721:

Purpose: To attenuate the band I carrier rests.

Symptom, if incorrectly set:
Bad picture quality when the filter attenuates the picture carrier (38.9MHz).

TP	ADJ.	MODE	INPUT
OFW 1720 Pin 1	L5721	E to E	40,4 MHz, 300mV _{ms} at Tuner 1701 Pin 17
TAPE		MEAS. EQ.	SPEC.
		Oscilloscope, Sinus Generator, Counter	adjust minimum amplitude

If the adjustment is correct the signal at pin 1 of SFW [1720] must be smaller than the input signal amplitude by at least 5 dB.

4. Deck electronics - AMB (DE, DC)

Service tasks after replacement of the head drum or EEPROM

4.1 Setting the gap position (GAP):

Purpose: To determine the correct head switching point during playback.

Symptom if incorrectly set:
Head switching fault and/or vertical picture flickers.

- Enter the service test program and, whilst step display is flashing, enter the step number 51, using the numerical keys.
- Insert a test cassette (e.g. 4822 397 30103) with the standard video signal in the VCR.
- By pressing the SELECT key whilst step 51 is flashing, the automatic adjustment is triggered and stored in the EEPROM.

TP	ADJ.	MODE	INPUT
		Stop Service Mode	
TAPE		MEAS. EQ.	SPEC.
VHS Alignment Tape			Call up Step 51 of Service Mode

After a correct adjustment, the display shows 1; 0 when incorrect. To leave the step, press Select.



Causes of incorrect adjustment :
Incorrect standard video signal.
Scanner fault.
Microprocessor fault.

4.2 "Studio Picture control" adjustment (SPC):

Purpose: Adjustment of the reference level for the SPC.

Symptom if incorrectly set:
The picture is played back at a lower resolution than would be possible.

TP	ADJ.	MODE	INPUT
		Stop Service Mode	RF or A1- input, black picture without BURST
TAPE		MEAS. EQ.	SPEC.
SPC Alignment Tape			Call up Step 52 of Service Mode

- Video signal via Scart or aerial
- Enter the service test program and, whilst the step is flashing, input the step number 52, using the numerical keys.
- Insert cassette (not a SVHS cassette).
- By pressing the SELECT key whilst step 52 is flashing, the recorder makes a recording in SP mode (approx. 10 sec.) and in LP mode (approx. 10 sec.), rewinds and carries out a playback with automatic adjustment.
- After a correct adjustment the display shows 1, and 0 for incorrect adjustments.



To leave the step press SELECT.

5. Audio linear - AMB (VS, AL, I/O)

Service tasks after replacement of coil L5603, IC7007 or the audio heads:

5.1 Adjusting the erasing frequency [5603]:

Purpose: To set the correct recording erasing frequency.

Symptom, if incorrectly set:
Erasing frequency or its harmonics cause audio faults.

TP	ADJ.	MODE	INPUT
wire 9034 (HEAD)	L5603	Set tuned to channel 27 Record	PAL white picture, audio IF and modulation on
TAPE		MEAS. EQ.	SPEC.
Blank Tape		Frequency Counter	70kHz ±10kHz

5.2 Adjustment of playback amplitude [3160]: (only for mono sets without front plugs)

Purpose: To set audio part amplification

Symptom, if incorrectly set:
Playback sounds too faint or too loud.

TP	ADJ.	MODE	INPUT
Pin 1 of Scart 1 (Audout)	R3160	SP Self-recording and Playback	(Video white picture) Audio in Scart 1, 700mV _{RMS} 1kHz
TAPE		MEAS. EQ.	SPEC.
Blank Tape		AC Millivoltmeter, Video Pattern Generator	500mV _{RMS} ±50mV

5.3 Adjustment of bias current [3618]:

Purpose: To set the optimum record bias current.

Symptom, if incorrectly set:
If the audio level is too high, the higher frequencies of the linear sound are too low.
If the level is too low, the higher frequencies are too strong and sound distortions increase.

TP	ADJ.	MODE	INPUT
R3608 (difference measurement BIAS1 - BIAS2)	R3618	Set tuned to channel 27 Record	PAL white picture, audio IF and modulation on
TAPE		MEAS. EQ.	SPEC.
Blank Tape		AC Millivoltmeter	15mV _{RMS} ±1mV _{RMS} (70kHz)

Checking the 'bias' adjustment:

After the bias has been adjusted to the indicated level, record some music, play back the recording, and adjust the audio switch to "MONO".

Only use brand name cassettes, but not chrome dioxide tapes. Check if sufficient treble is reproduced and for any audio distortion. In case of insufficient treble, reduce 'bias' current a little. In case of excessive distortion, increase 'bias' current a little.

2-8

6. Stereo demodulator TDA9840 - AMB (FV) (only for stereo sets)

Service tasks after replacement of IC7780 or the EEPROM:

6.1 Stereo level adjustment [7780]:

Purpose: Amplification adjustment of stereo demodulator TDA9840 [7780].

Symptom if incorrectly set:
Sound is too low or too loud

– Enter the service test program and, whilst step display is flashing, enter the step number 60, using the numerical keys.

TP	ADJ.	MODE	INPUT
Pin 1 of Scart 1 (Audout)	refer to description	Stop Service mode call up Step 60	HF - input, white picture, 1kHz sound only on right channel +/-27kHz deviation
TAPE		MEAS. EQ.	SPEC.
		AC Millivoltmeter Video Pattern Generator	500mV _{RMS} ±50mV

By pressing the SELECT key whilst **step 60** is flashing, the output select is switched to stereo and the display shows, for instance:



- Connect the millivoltmeter to Scart1 pin1(Audio out right).
- The level on Scart 1, Pin1 (Audio out) can be adjusted to the set value by pressing the UP (value increases) or DOWN key (value decreases).
(The amplitude changes by 0.5 dB each time the key is pressed).
The range is shown in the display with the numbers 1-9.
- The value is automatically stored in the EE-PROM each time the key is depressed.

After leaving the step with SELECT, the last value will be stored in the EE-PROM.

6.2 Adjustment of stereo channel separation [7780]:

Purpose: Adjustment of channel separation of the stereo demodulator TDA9840 [7780].

Symptom if incorrectly set:
Crosstalk between left and right channel.

– Enter the service test program and, whilst step display is flashing, enter the step number 61, using the numerical keys.

TP	ADJ.	MODE	INPUT
Pin 3 of Scart 1 (Audout left)	refer to description	Stop Service mode call up Step 61	HF - input, white picture, 1kHz sound only on right channel +/-27kHz deviation
TAPE		MEAS. EQ.	SPEC.
		AC Millivoltmeter or Oscilloscope, Video Pattern Generator	lowest value

By pressing the SELECT key whilst **step 61** is flashing, the output select is switched to stereo and the display shows, for instance:



- Connect Millivoltmeter to Scart1 Pin 3 (Audio out left).
- The noise amplitude on Scart 1 Pin 3 (Audio out left) can be adjusted to the lowest value by pressing the UP(+) or DOWN (-) keys.
(The amplitude changes by 0.1 dB each time the key is pressed). The range is shown in the display with the numbers 0...49.
- The value is automatically stored in the EE-PROM each time the button is pressed.

After leaving the step with SELECT, the last value remains stored in the EE-PROM.

7. Audio Linear playback level adjustment TDA9604H - AMB (AF)

(only for stereo sets and mono sets with front plugs)

Purpose: Adjustment of the amplification of the audio linear playback level TDA9604H [7850].

Symptom if incorrectly set:
The linear playback sound is too low or too loud.

– Enter the service test program and, whilst step display is flashing, enter the step number 62, using the numerical keys.

TP	ADJ.	MODE	INPUT
Pin 1 of Scart 1 (Audout)	refer to description	SP Self-recording and Playback, Service mode call up Step 62	(Video white picture) Audio in Scart 1, 700mV _{RMS} , 1kHz
TAPE		MEAS. EQ.	SPEC.
Blank Tape		AC Millivoltmeter, Video Pattern, Frequency Generator	500mV _{RMS} ±50mV

By pressing the SELECT button whilst **step 62** is flashing, the output select is switched to Mono and the display shows, for instance:



- Make a recording of the audio signal on E1.
- Connect the millivoltmeter to Scart1 Pin1(Audio out) and play the recording back.
- The level on Scart 1, Pin1 (Audio out) can be adjusted to the set value by pressing the UP (value increases) or DOWN keys (value decreases).
(The amplitude changes by 1 dB each time the key is pressed).
The range is shown in the display by the numbers 0...15.
- The value is automatically stored in the EE-PROM each time the button is pressed.

8. Display Control - AMB (DE, DC)

Service tasks after replacement of the clock quartz [1297] or the EEPROM:

8.1 Clock frequency output

Purpose: Setting the exact clock function.

Symptom, if incorrectly set:
The clock is too fast or too slow.

Enter the service test program and, whilst step display is flashing, enter the **step number 99**, using the numerical keys.
After entering with SELECT, the display is switched off and no further function can be carried out. At the HEST measuring point [7201 pin 80], the uncorrected clock frequency of approx. 2048 Hz is always output.



Measure the output frequency with the calibrated counter (minimum resolution of 6 digits) and note down the value (f_{meas}).

TP	ADJ.	MODE	INPUT
7201/80 (HEST)		Stop Service Mode call up Step 99	
TAPE		MEAS. EQ.	SPEC.
		Frequency counter with 6 digits	refer to description below

Determining the deviation (in ppm):

f_{meas} measured frequency
 f_{nom} target frequency (2048,000 Hz)

$$\text{Deviation} = 1 \times 10^6 \times (f_{\text{meas}} - f_{\text{nom}}) / f_{\text{nom}}$$

Determining the correction value for Step 53:

Correction value = Deviation / 0.763 + 128 (round off to whole number)

The calculated **correction value** must be between 0 and 255 (change quartz otherwise), and must be entered in Step 53 and saved.

This Step can only be left by performing a **main reset**, after which the service program must be entered again before Step 53 can be called up.

Example:

f_{meas} = 2047.97Hz f_{nom} = 2048.00Hz

Deviation = $1 \times 10^6 \times (2047.97 - 2048) / 2048 = -14.648$
Correction value = $-14.648 / 0.763 + 128 = 108.80 = 109$

8.2 Inputting the clock correction

Before carrying out step 53, the correction value must be established in step 99.

By pressing the SELECT key whilst **step 53** is flashing, the display shows, for instance (128 is default value from a empty EEPROM):



Using the numerical keys of the remote control, the established correction value from **Step 99** is entered as a 3-digit number (value must be between 0 and 255).

After pressing the OK key on the remote control, the entered code is stored, the display shows OK for approx. 3 seconds and then the stored value in decimal format.



In case of an invalid entry (value >255), the activation of the OK key causes the content of the last stored value to be displayed and OK does not appear in the display.
To leave the step press Select.

List of abbreviations

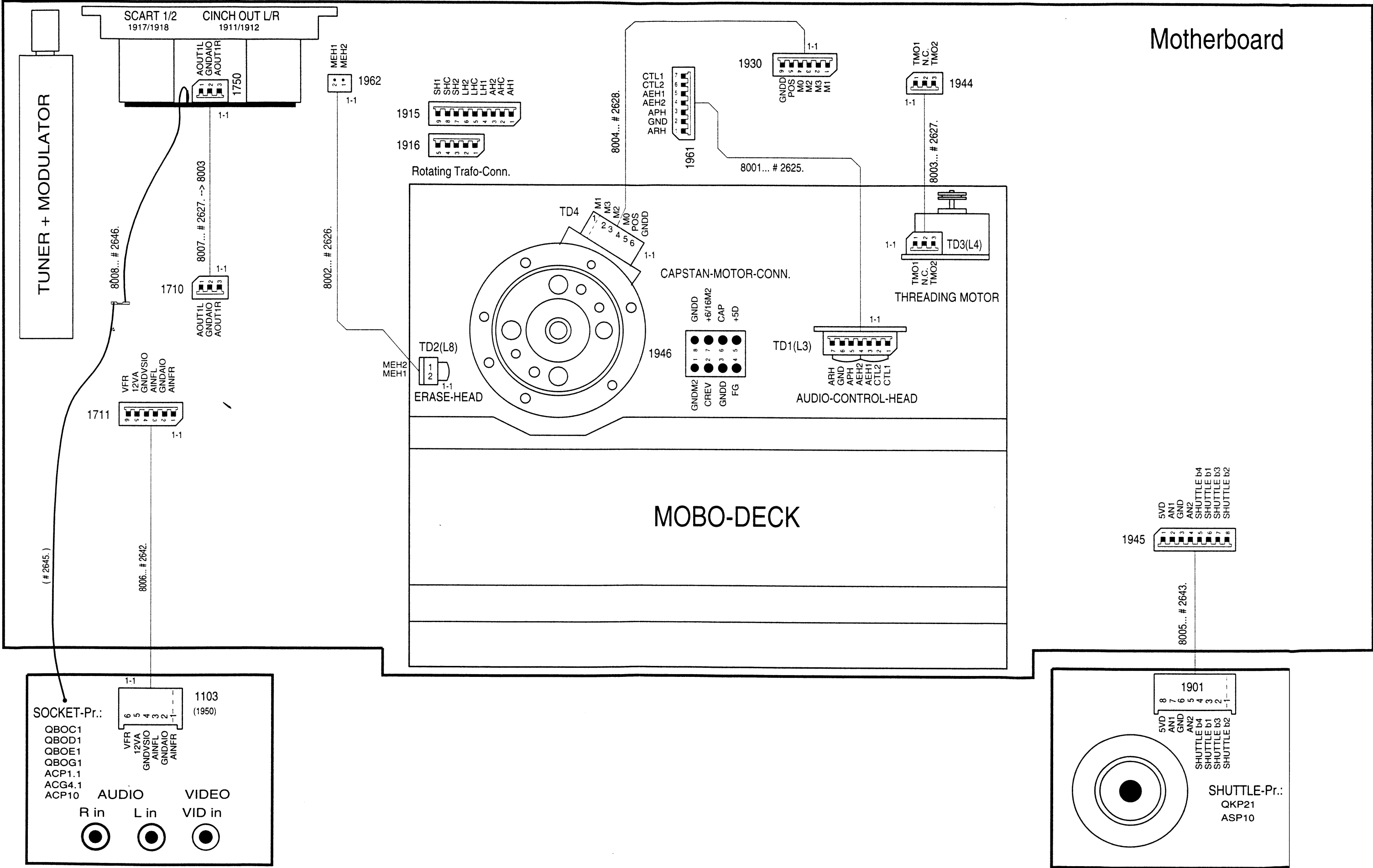
Signal	Description	Application															
+5AS	+5V analog after fuse 1700																QNIC
+5ASS	+5V digital, after coil 5706																QNIC
+5D	+5V digital		DE														QNIC
-28V	-28V display supply	PS		DC				IO									
-7V	-7V I/O-switches supply							IO									
12SW	+12V analog (< 6W switched)					AL				FV							QNIC
12VA	+12V analog	PS						IO		FV	AF						
14VM1	+14V for threading- and headmotor	PS	DE														
2FSC	2x Colour subcarrier				VS											OS	
33V	+33V for tuner tuning voltage	PS								FV							
5VA	+5V analog	PS						IO		FV	AF	OS					
5VASW	+5V analog (< 6W switched)	PS	HA	DE	VS			SE	FV			OS	QNIC				
5VASW2	+5V analog after coil 5802															OS	
5VASWB	+5V analog after coil 5726									FV							
5VD	+5V digital	PS		DE	DC					FV							
5VD1	+5V digital, after coil 5200			DC													
5VD2	+5V digital, after coil 5400			DE													
8SC1	Scart 1 pin 8 output			DE				IO									
8SC2	Scart 2 pin 8 input			DE				IO									
9/14VM2	Capstan motor supply, switched	PS	DE														
AEH1/2	Audio erase head					AL											
AF1	Audio from frontend, left					AL	IO			FV	AF						
AF2	Audio from frontend, right									FV	AF						
AF2	Audio from frontend, right									FV	AF						
AFC	Automatic frequency control			DC						FV							
AFC	Automatic frequency control									FV							QNIC
AFE	Audio from frontend									FV							
AGC	Automatic gain control			DE						FV							
AH1/2/C	Audio heads		HA														
AIN1	Audio input scart 1					AL	IO										
AIN1L	Audio input scart 1, left						IO				AF						
AIN1R	Audio input scart 1, right						IO				AF						
AIN2	Audio input scart 2					AL	IO										
AIN2L	Audio input scart 2, left						IO				AF						
AIN2R	Audio input scart 2, right						IO				AF						
AINFL	Audio left from Front connector						IO				AF						
AINFR	Audio right from front connector						IO				AF						
AMCO	Audio to the modulator									FV	AF						
AML	Audio mono playback					AL	IO			FV	AF						
AML	Audio mono playback					AL	IO				AF						
AML	Audio mono playback					AL	IO				AF						
AN1/2	Analog voltage from keyboard matrix			DC													
ANIL	NICAM Audio, left									FV							QNIC
ANIR	NICAM Audio, right									FV							QNIC
AOUT1L	Audio output from scart 1, left						IO				AF						
AOUT1R	Audio output from scart 1, right						IO				AF						
AOUT2L	Audio output from scart 2, left						IO				AF						
AOUT2R	Audio output from scart 2, right						IO				AF						
APH	Audio playback head					AL											
ARH	Audio record head					AL											
BLANKING	Blanking pulse RGB loophrough							IO									
BLUE	Blue signal between scart 1/2							IO									
CAP	Capstan control voltage			DE													
CKDET	Colour system information			DE	VS												
CLKD1	Serial bus clock			DE	DC												
CREV	Capstan reverse			DE													
CROT	Colour rotation on/off			DE	VS												

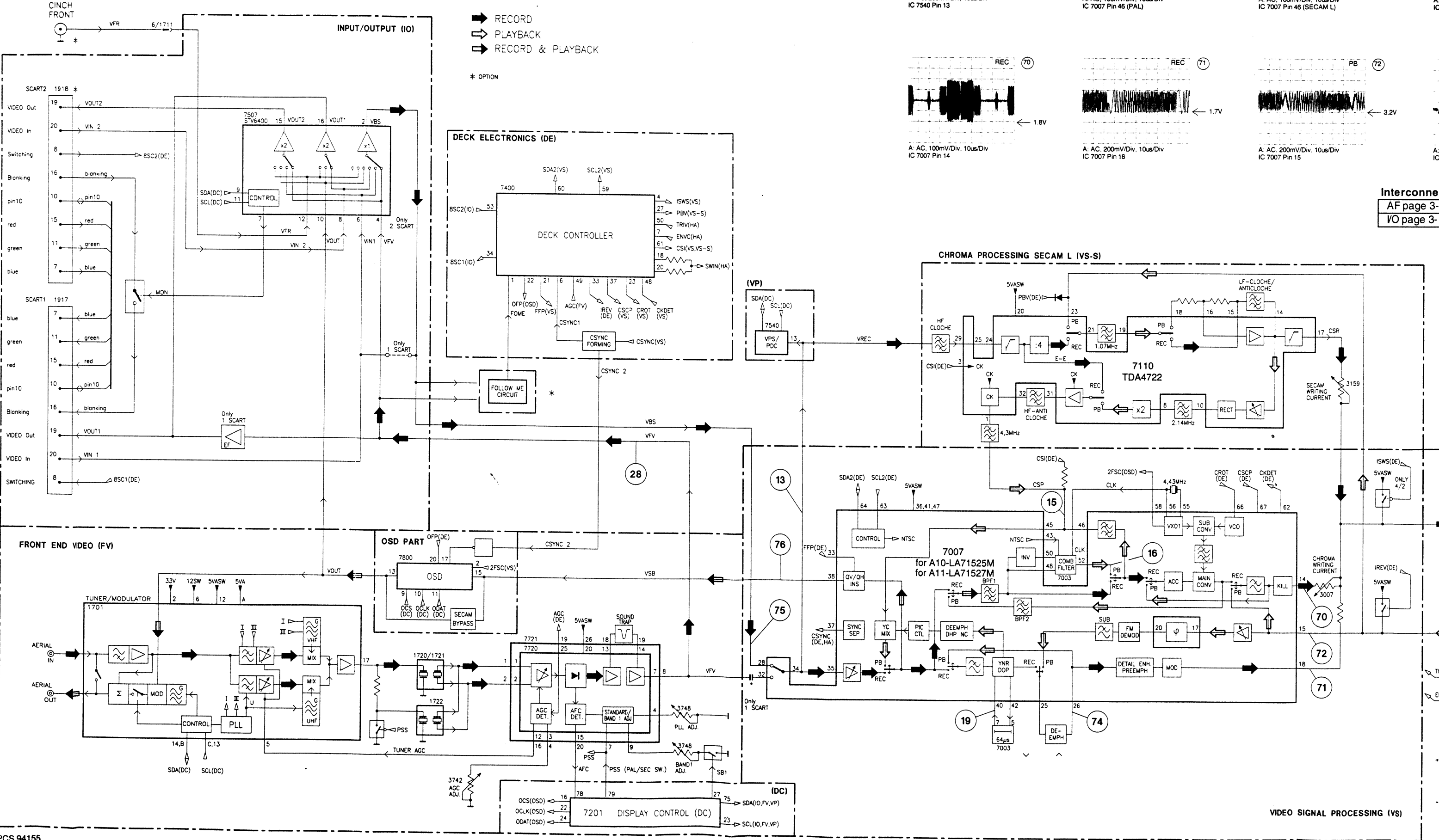
Signal	Description	Application															
CSCP	Colour phase switching for LP feature mode			DE	VS												
CSI	Colour system information			DE						SE							
CSP	Chrominance secam playback				VS					SE							
CSR	Chrominance secam record			HA						SE							
CSW	8V/14V switching for capstan motor	PS		DE													
CSYNC1/2	Composite sync pulse			HA	DE	VS				SE			OS				
CTL1/2	Control track signal				DE			AL									
DATD1/2	Serial bus data				DE	DC											
DEC	Audio switching voltage									IO							
ENVC	Envelope comparator signal			HA	DE												
FFP	Feature frame pulse				DE	VS											
FG	Capstan tach pulse				DE												
FGD	Capstan tach pulse digital				DE												
FMAP	FM audio playback			HA								AF					
FMAR	FM audio record			HA								AF					
FMPV	FM video playback			HA		VS				SE							
FMRV	FM video record			HA		VS											
FOME	Follow Me (video signals equal)				DE									OS			
FTA	Threading tach				DE												
FTAD	Threading tach digital				DE												
GND	Ground analog									IO		FV					QNIC
GND	Ground analog																QNIC
GND	Ground analog											AF					
GND	Ground analog									IO							
GND	Ground analog									AL							
GND	Ground digital			DE				IO		AF							QNIC
GND	Ground erase oscillator					AL											
GND	Ground capstan motor			DE													
GND	Ground signal electronics											AF					
GND	Ground analog VS, IO							IO									
GREEN	Green signal between scart1/2							IO									
HEH	Heater for displaytube high	PS			DC												
HELO	Heater for displaytube low	PS			DC												
HES	Heater voltage control signal				DC												
HP2	Head pulse audio			HA	DE							AF					
I/R	Deck switch / Record protection				DE												
I/LED	LED-tower supply				DE												
INIT	Deck switch				DE												
IPOR	Inverse power on reset				DE	DC											
IRAF	Inverse record FM-audio			HA	DE												
IREV	Dubbing oscillator on/off				DE		VS	AL									
ISTBY	Inverse stand by		PS			DC											
ISWS	Video-FM mute				DE		VS										
IWIND	Control pulse amplification low				DE												
LH1/2/C	Long play heads			HA													
MEH1/2	Main erase head									AL							
MON	Monitor loop through scart 1/2										IO						
MOT0-3	Head motor Control lines				DE												
MTA	Audio mute				DE			AL									
NC	Not connected				DE												
OCLK	OSD-bus clock					DC										OS	
OCS	OSD chip select					DC										OS	
ODAT	OSD-bus data					DC										OS	
OFF	Frame pulse				DE											OS	

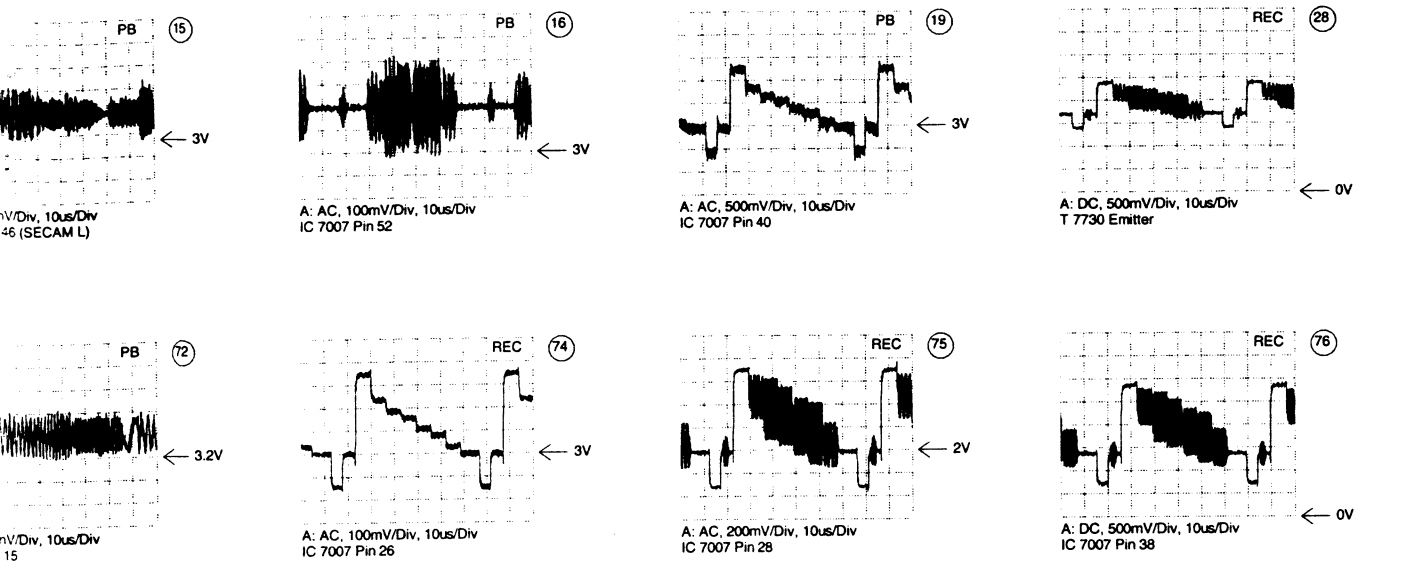
Signal	Description	Application											
PBV	Playback		DE				SE						
PG/FG	Head wheel position/-speed		DE										
POS	Position pulse headwheel		DE										
PSS	PAL or secam-L			DC				FV					
RECP	Record protection		DE										
RED	Red signal between scart 1/2						IO						
REEL	Head wheel control		DE										
SB1	Secam band 1			DC				FV					
SCL	IIC bus clock						IO	FV	AF	OS	QNIC		
SCL2	Serial bus clock		DE	VS									
SDA	IIC bus data						IO	FV	AF	OS	QNIC		
SDA2	Serial bus data		DE	VS									
SFS	Sound filter switch			DC				FV					
SH1/2/C	Standard play heads	HA											
SSIF	Second sound interfrequency							FV			QNIC		
SWIN	Head switching pulse	HA	DE										
SYNC	Control track pulse		DE										
TAE	Tape end detection		DE										
TAS	Tape start detection		DE										
THIO	Threading motor in/out		DE										
TMO	Threading motor on/off		DE										
TMO1/2	Threading motor connection		DE										
TRIA/ALI	Tracking information audio / Audio level indication		DE						AF				
TRIV	Tracking information video	HA	DE										
VBS	Video input				VS		IO				OS		
VFR	Video from front connector						IO						
VFV	Video from frontend				VS		IO	FV		OS			
VIN1	Video input scart 1						IO						
VIN2	Video input scart 2						IO						
VISS	Control sync pulse inversion		DE										
VMOD	Video to the modulator						IO	FV					
VOUT	Video from OSD part						IO			OS			
VREC	Video record from I/O				VS			SE		OS			
VREF	Reference voltage							SE					
VSB	Video from signal electronics				VS					OS			
W/R	Control track write/read		DE										
WTL	Wind tachometer left		DE										
WTLD	Wind tachometer left digital		DE										
WTR	Wind tachometer right		DE										
WTRD	Wind tachometer right digital		DE										

PS	Power Supply	page 3-8
HA	Head Amplifier	page 3-9
DE	Deck Electronics	page 3-10
DC	Display Control	page 3-11
VS	Video Signal Processing	page 3-12
AL	Audio Linear	page 3-12
IO	In/Out	page 3-13
SE	Secam Processing	page 3-14
FV	Frontend	page 3-15
AF	Audio Processing	page 3-16
OS	On Screen Display	page 3-17
QNIC	Nicam Board	page 3-18

Wiring Diagram

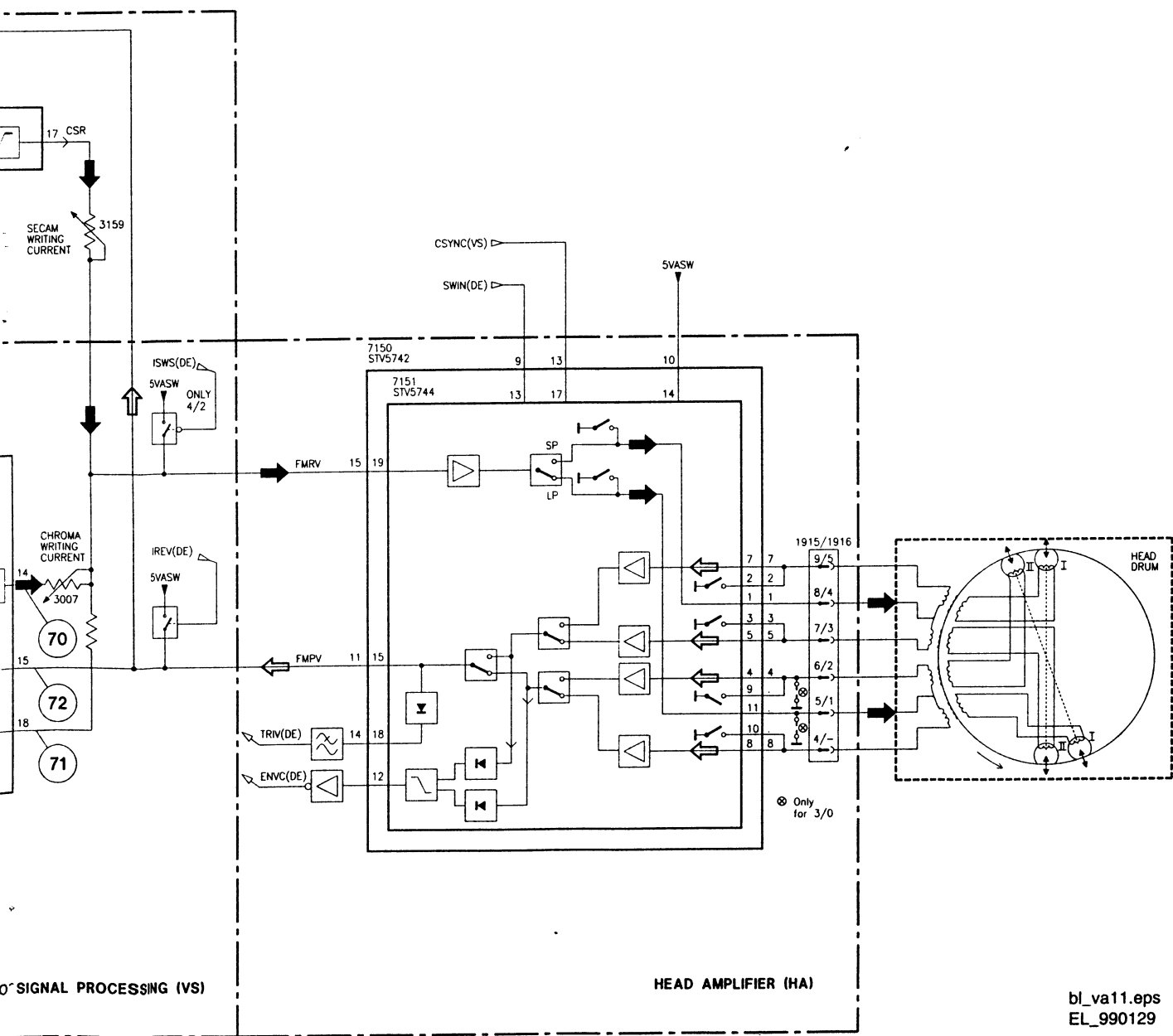






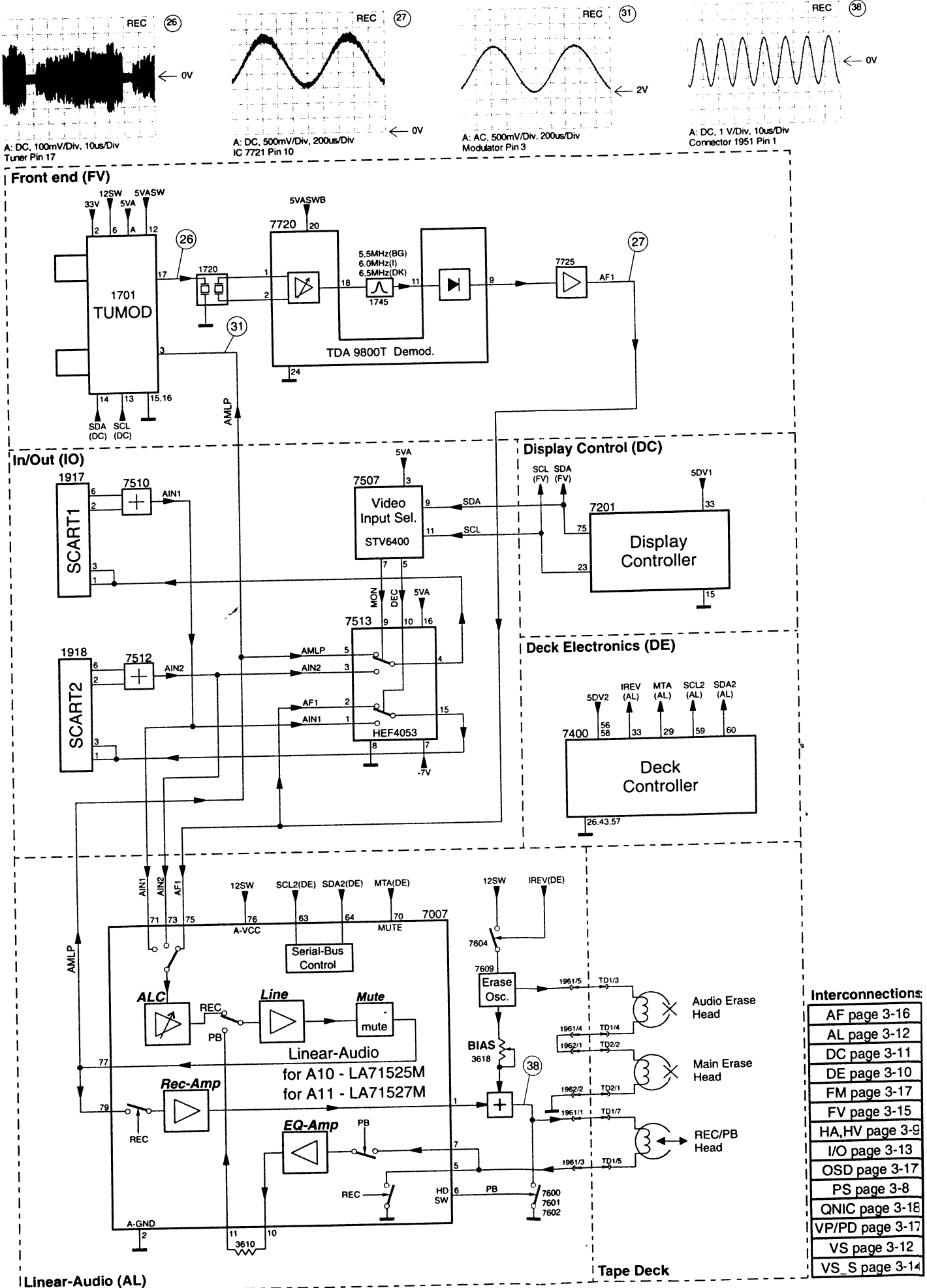
Interconnections:

AF page 3-16	AL page 3-12	DC page 3-11	DE page 3-10	FM page 3-17	FV page 3-15	HA, HV page 3-9
I/O page 3-13	OSD page 3-17	PS page 3-8	QNIC page 3-18	VP/PD page 3-17	VS page 3-12	VS_S page 3-14



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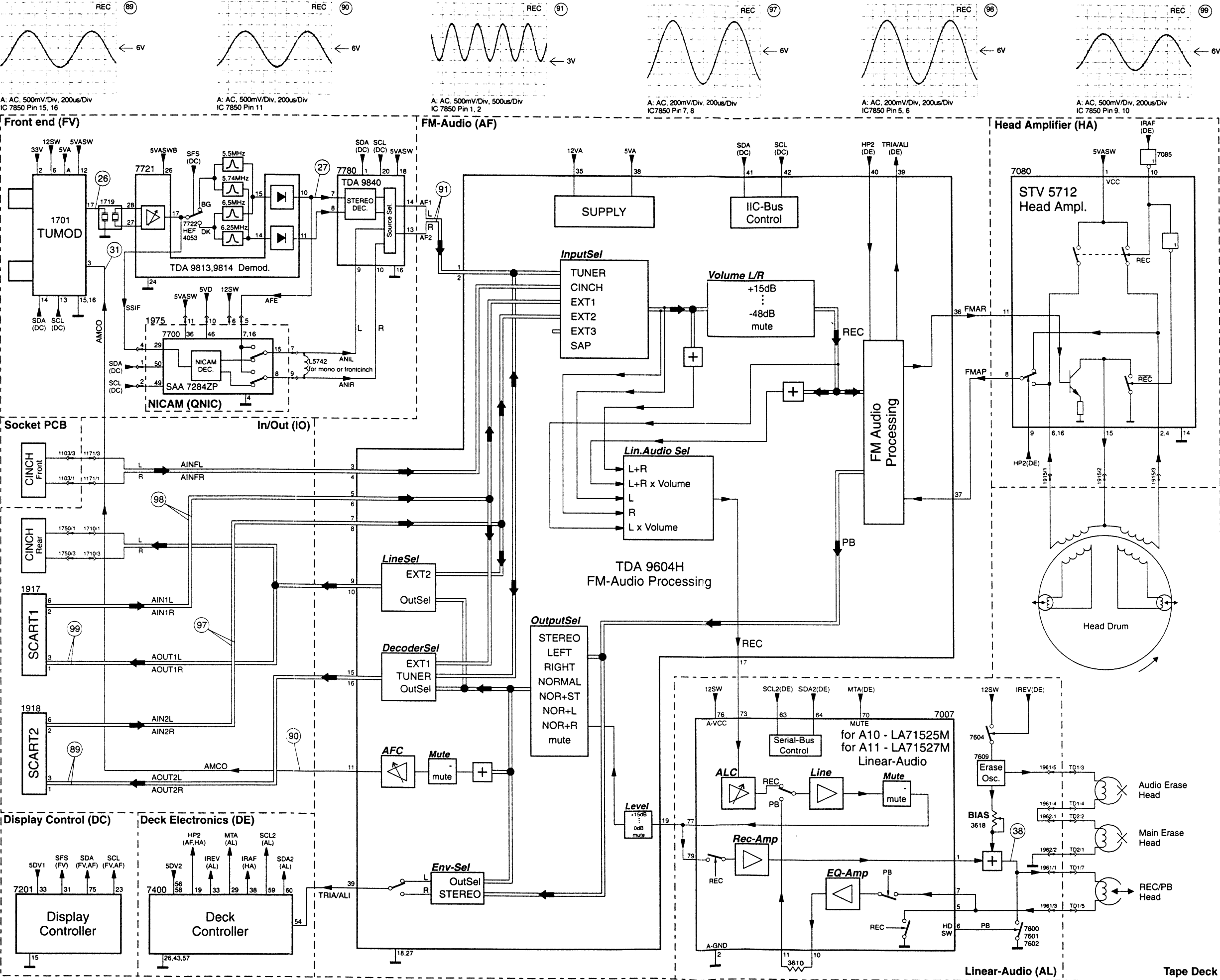
Block Diagram Audio Mono



Interconnections:

AF page 3-16
AL page 3-12
DC page 3-11
DE page 3-10
FM page 3-17
FV page 3-15
HA, HV page 3-9
I/O page 3-13
OSD page 3-17
PS page 3-8
QNIC page 3-18
VP/PD page 3-17
VS page 3-12
VS_S page 3-14

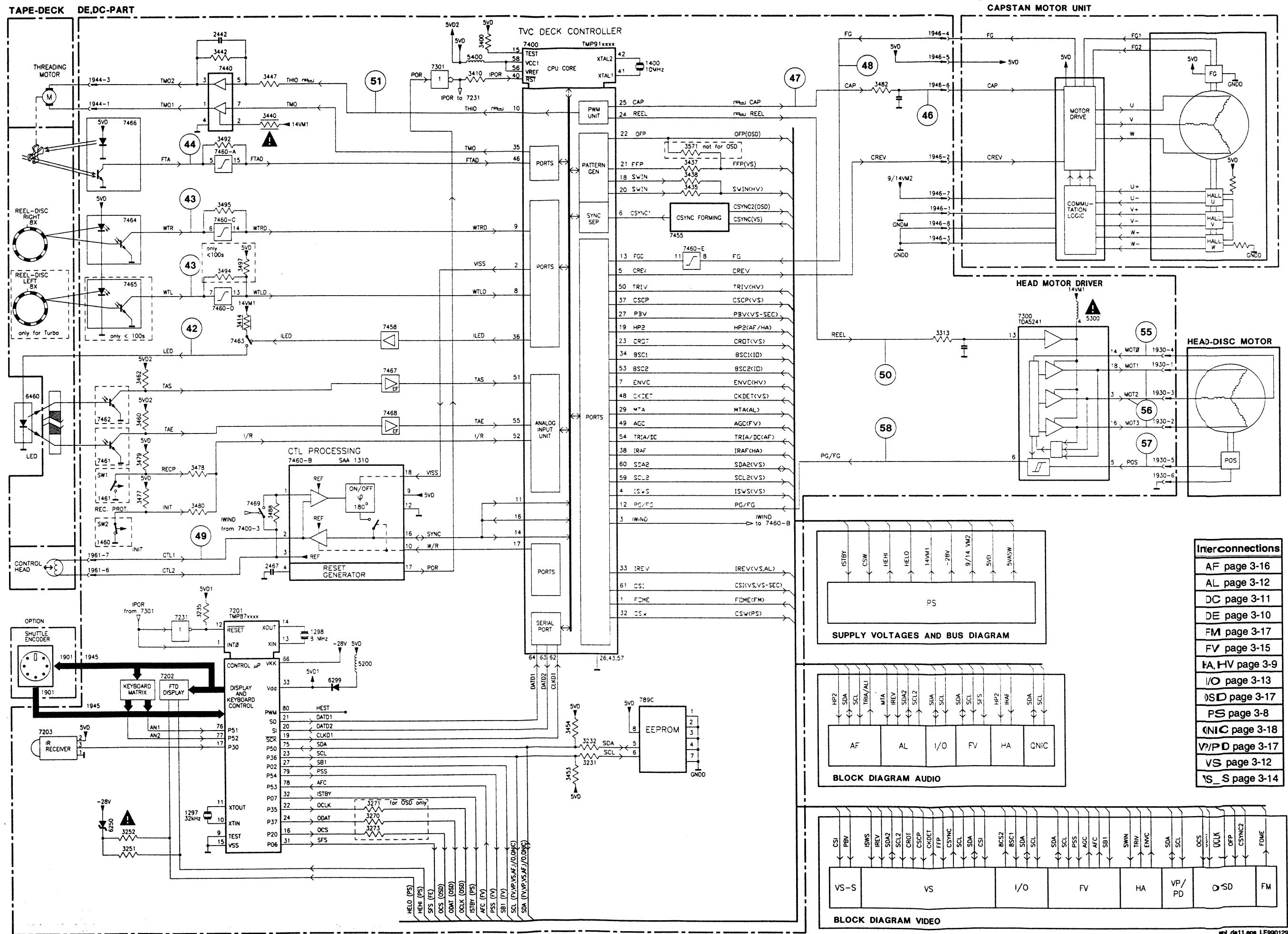
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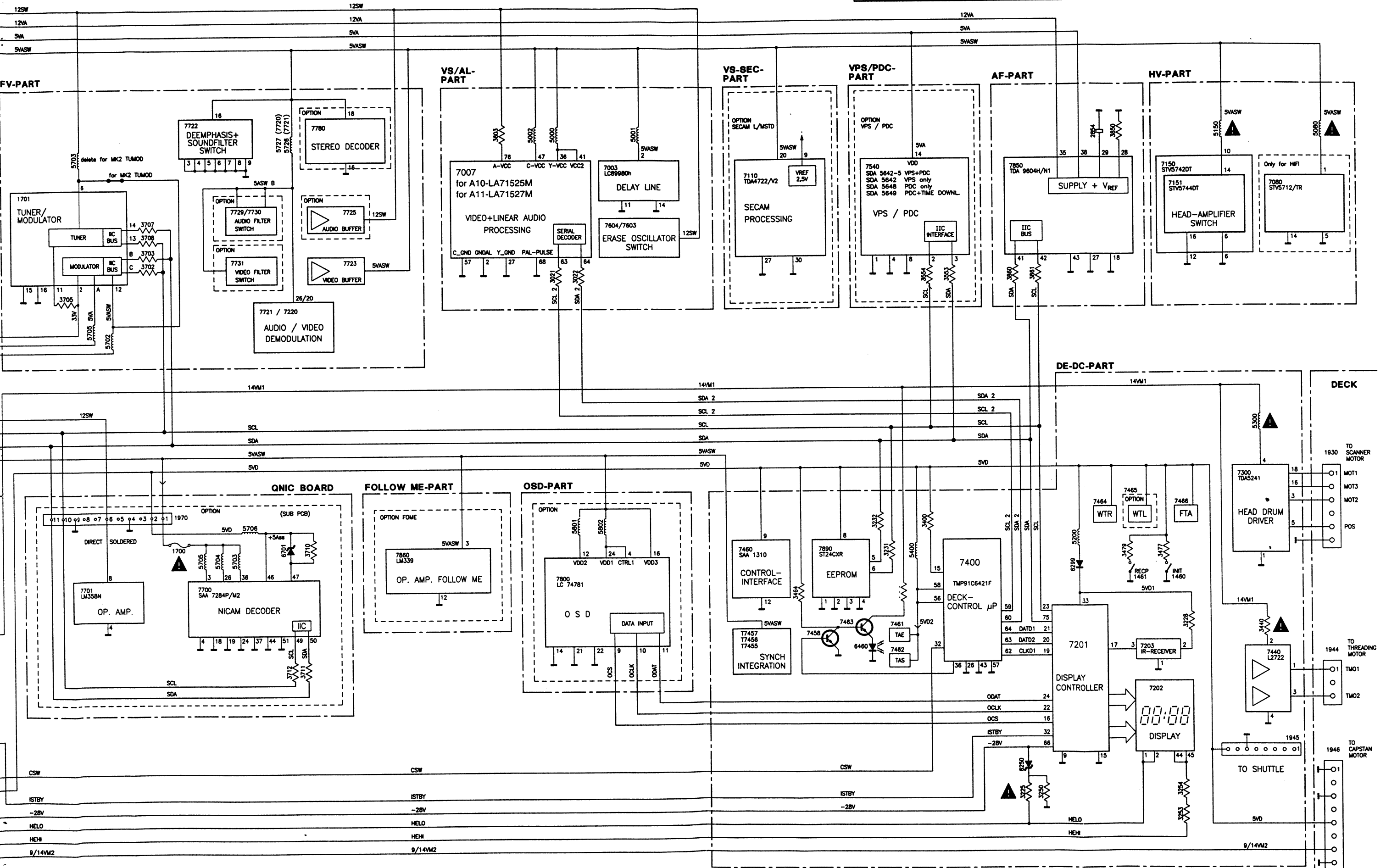
AF	page 3-16
AL	page 3-12
DC	page 3-11
DE	page 3-10
FM	page 3-17
FV	page 3-15
HA, HV	page 3-9
I/O	page 3-13
OSD	page 3-17
PS	page 3-8
QNIC	page 3-18
VP/PD	page 3-17
VS	page 3-12
VS_S	page 3-14

Block Diagram Digital



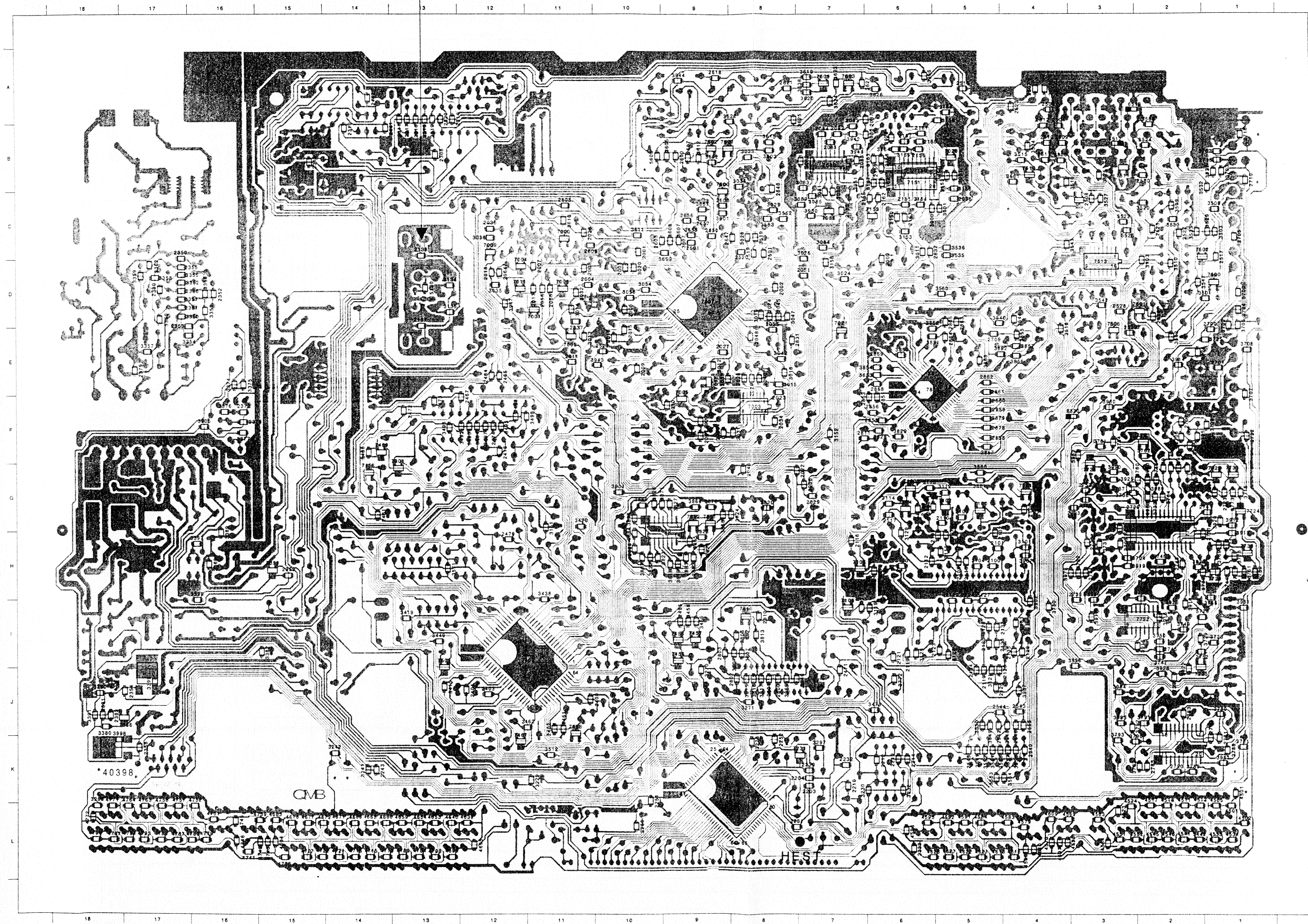
Interconnections:

AF page 3-16	AL page 3-12	DC page 3-11	DE page 3-10	FM page 3-17	FV page 3-15	HA, HV page 3-9
I/O page 3-13	OSD page 3-17	PS page 3-8	QNIC page 3-18	VP/PD page 3-17	VS page 3-12	VS_S page 3-14



Mother Board AMB - solder side

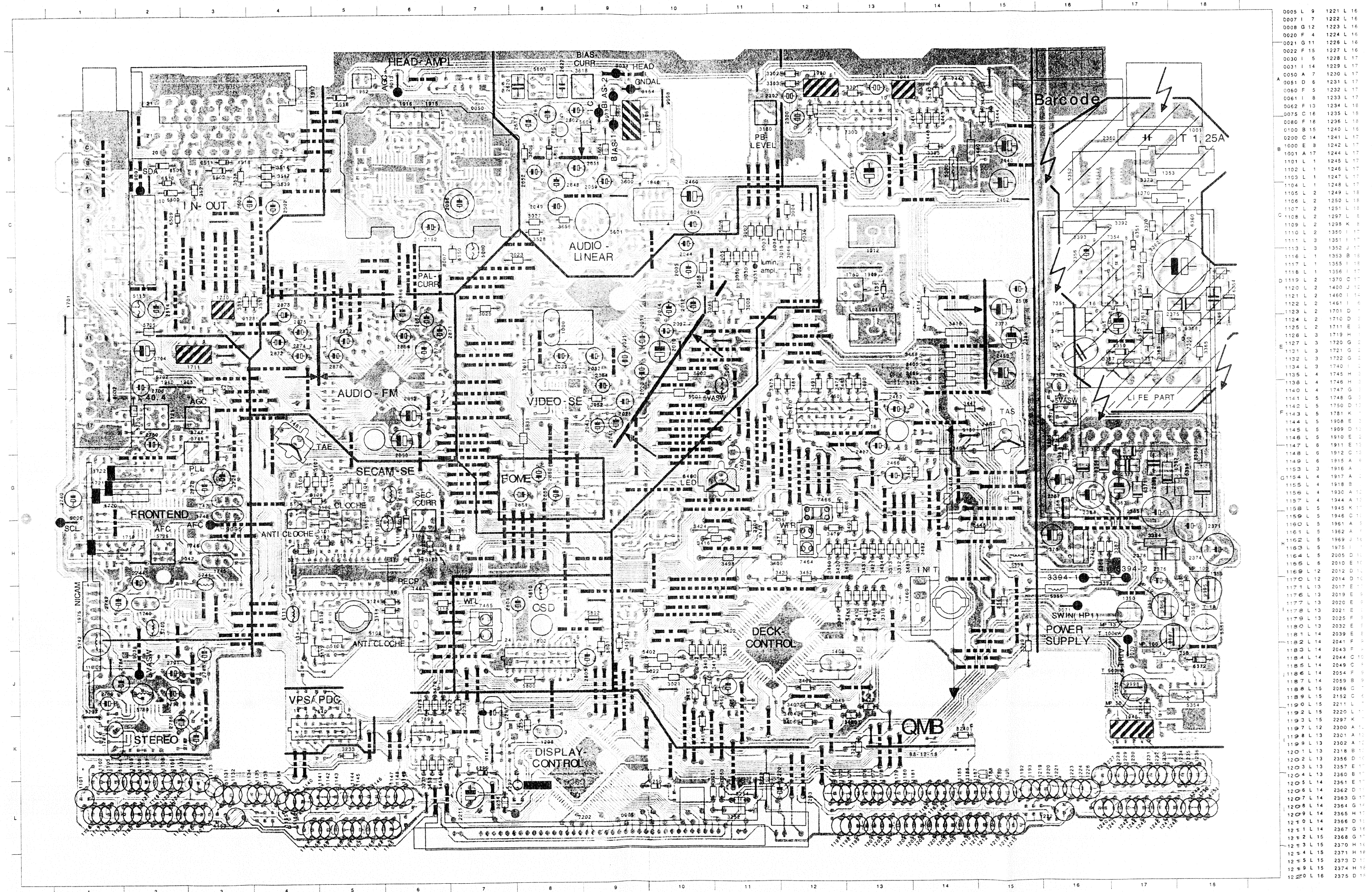
Layout for cinch print rear



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2003 D 10	2320 A 13	2789 K 2
2004 D 11	2350 C 17	2790 K 2
2006 D 10	2352 D 16	2793 H 2
2007 D 11	2353 D 17	2794 D 1
2008 D 11	2354 J 17	2795 F 2
2009 E 10	2355 D 17	2800 J 8
2011 E 11	2358 K 17	2801 J 8
2013 D 11	2359 H 15	2802 J 8
2015 E 10	2369 H 16	2803 I 9
2016 E 10	2372 F 16	2810 I 8
2018 D 12	2379 E 17	2811 F 7
2022 G 8	2380 D 17	2829 G 7
2023 E 8	2381 D 17	2831 E 8
2024 D 8	2383 J 18	2832 C 6
2026 C 11	2386 D 17	2851 F 6
2027 E 9	2400 J 11	2853 F 6
2028 E 8	2402 J 11	2855 F 6
2029 E 8	2403 J 12	2856 F 6
2030 F 9	2404 J 12	2857 F 5
2031 F 8	2416 F 12	2858 F 5
2033 E 9	2441 B 14	2859 F 5
2034 F 8	2442 A 14	2860 F 5
2035 E 8	2455 I 9	2861 E 5
2036 C 12	2461 G 14	2862 E 5
2037 D 11	2464 E 12	2863 D 5
2038 C 5	2465 E 12	2864 E 5
2040 E 8	2467 F 12	2865 D 5
2042 E 8	2468 F 12	2866 E 6
2045 D 8	2470 H 12	2869 E 6
2046 G 8	2471 J 7	2878 F 5
2047 F 9	2472 F 13	2879 F 5
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2051 D 7	2474 F 12	2883 H 9
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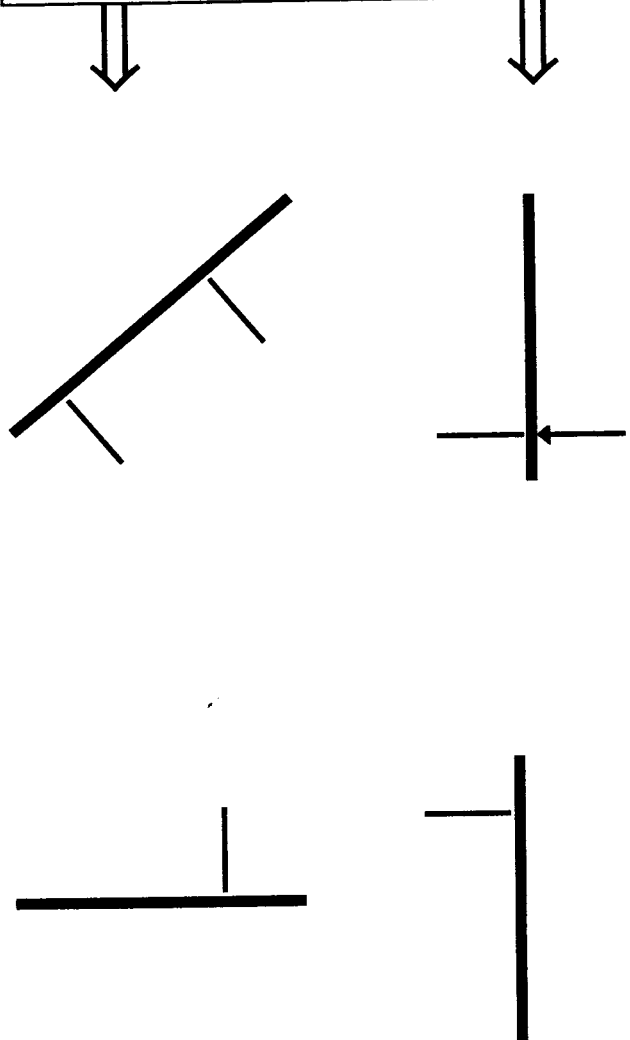
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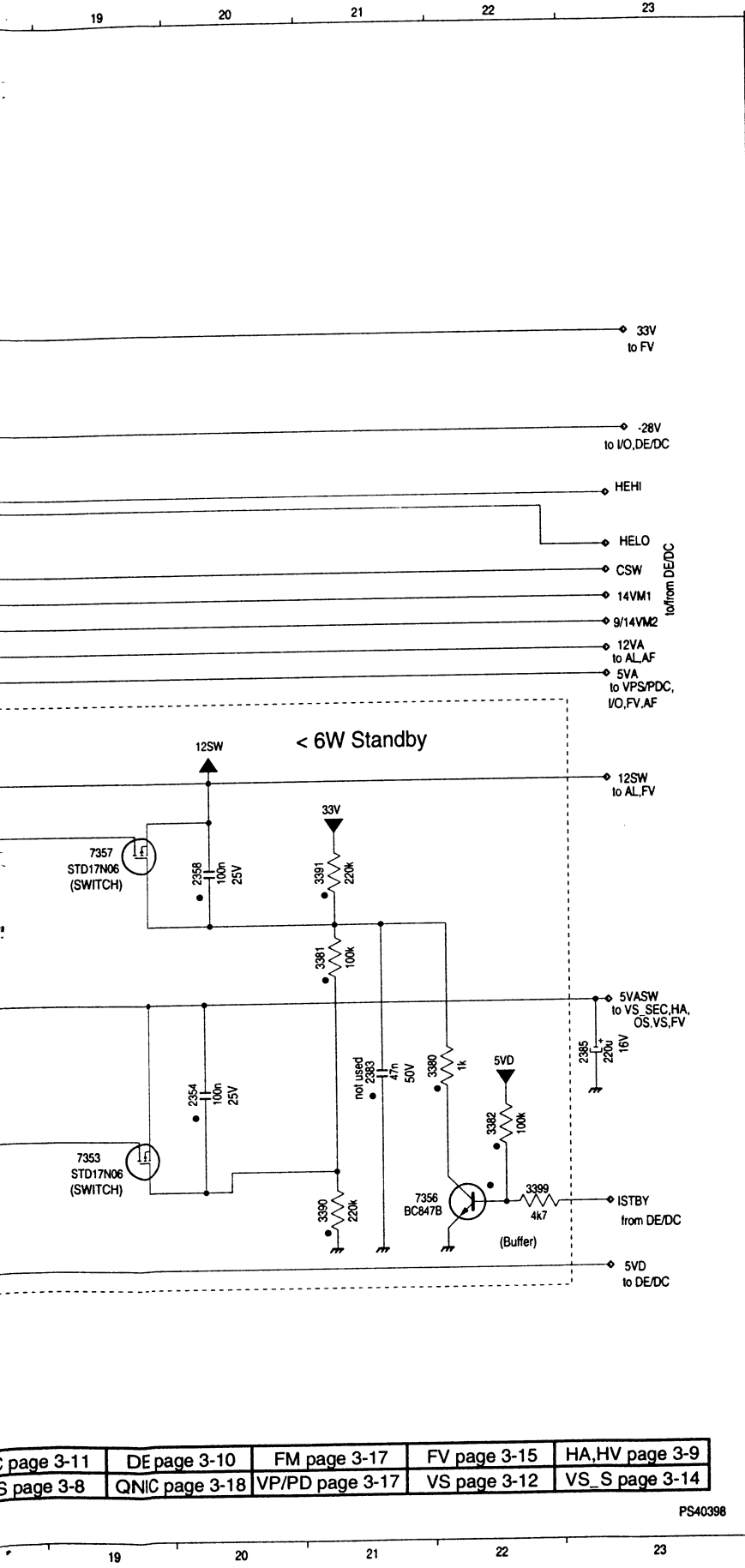
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Make sure that the components in these areas are aligned correctly !!! (Danger of collision with deck)



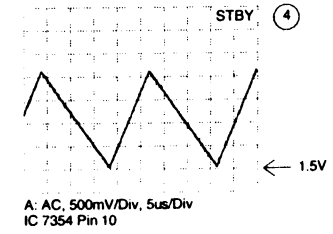
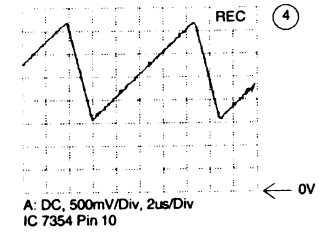
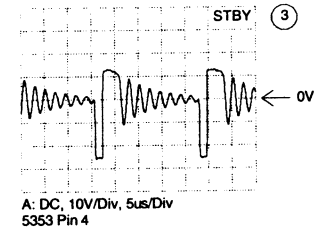
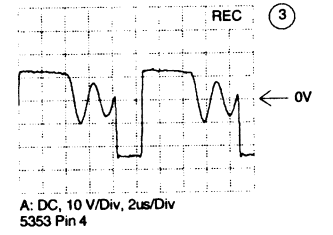
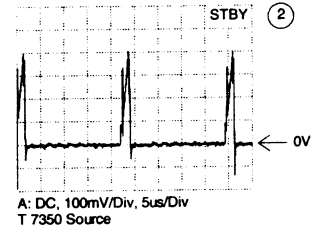
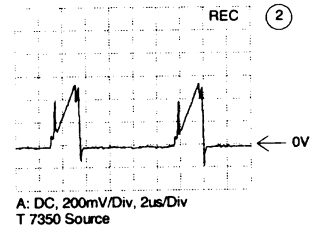
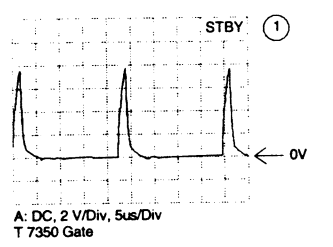
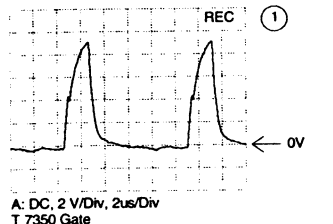
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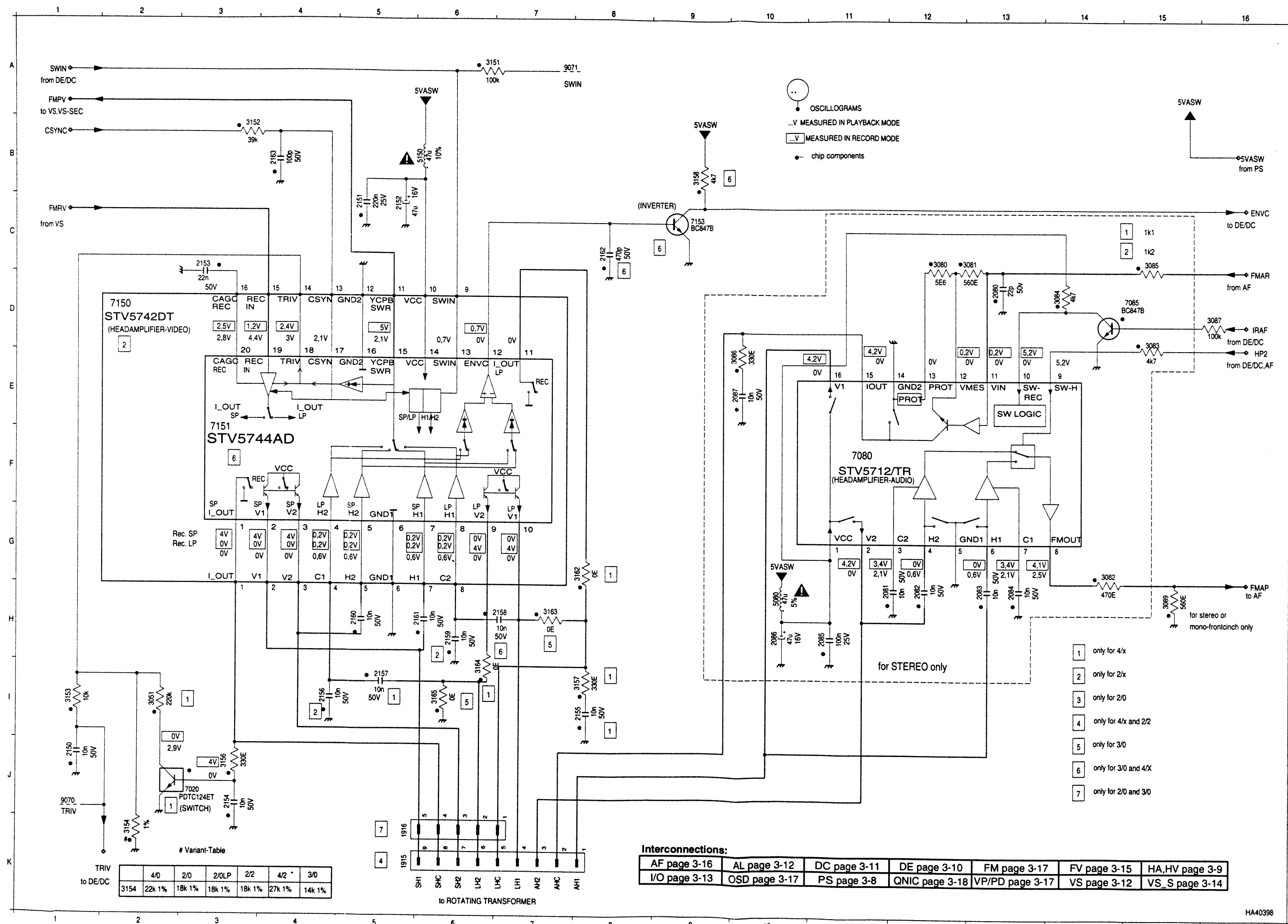


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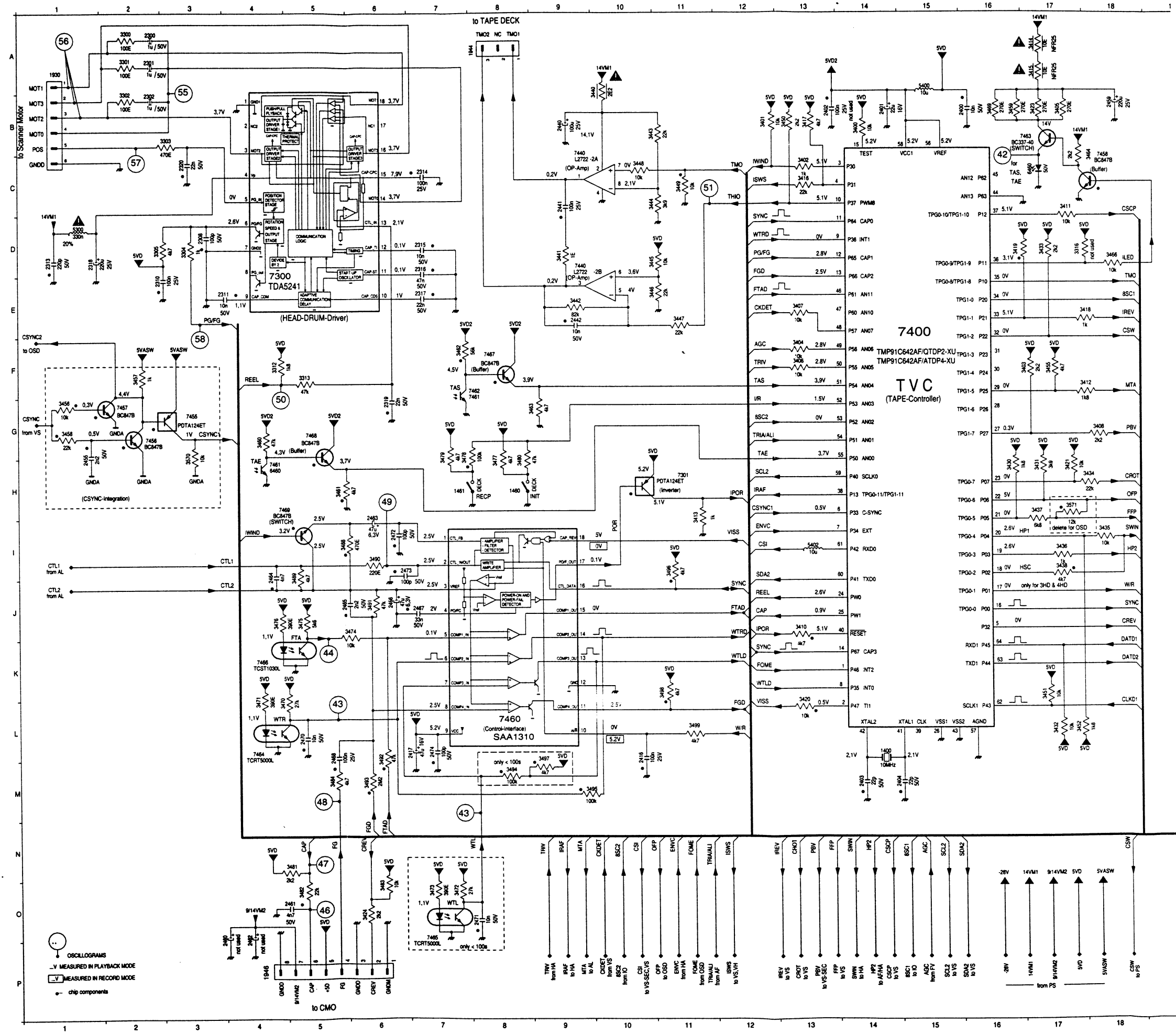
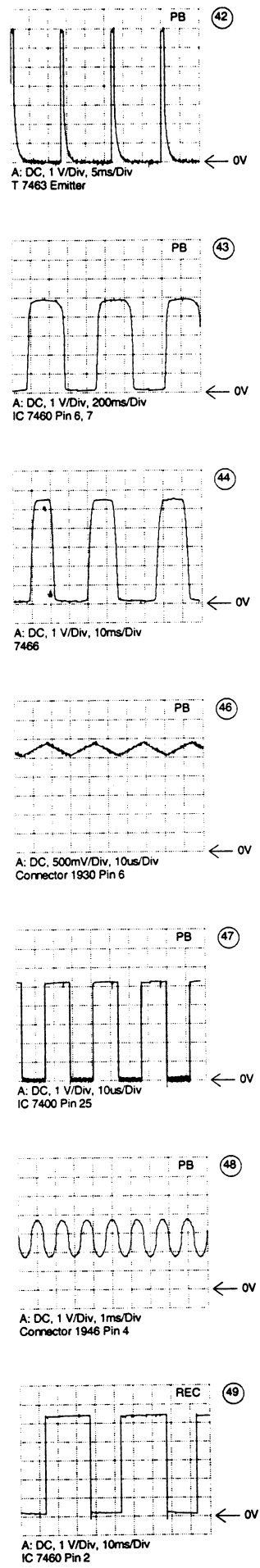
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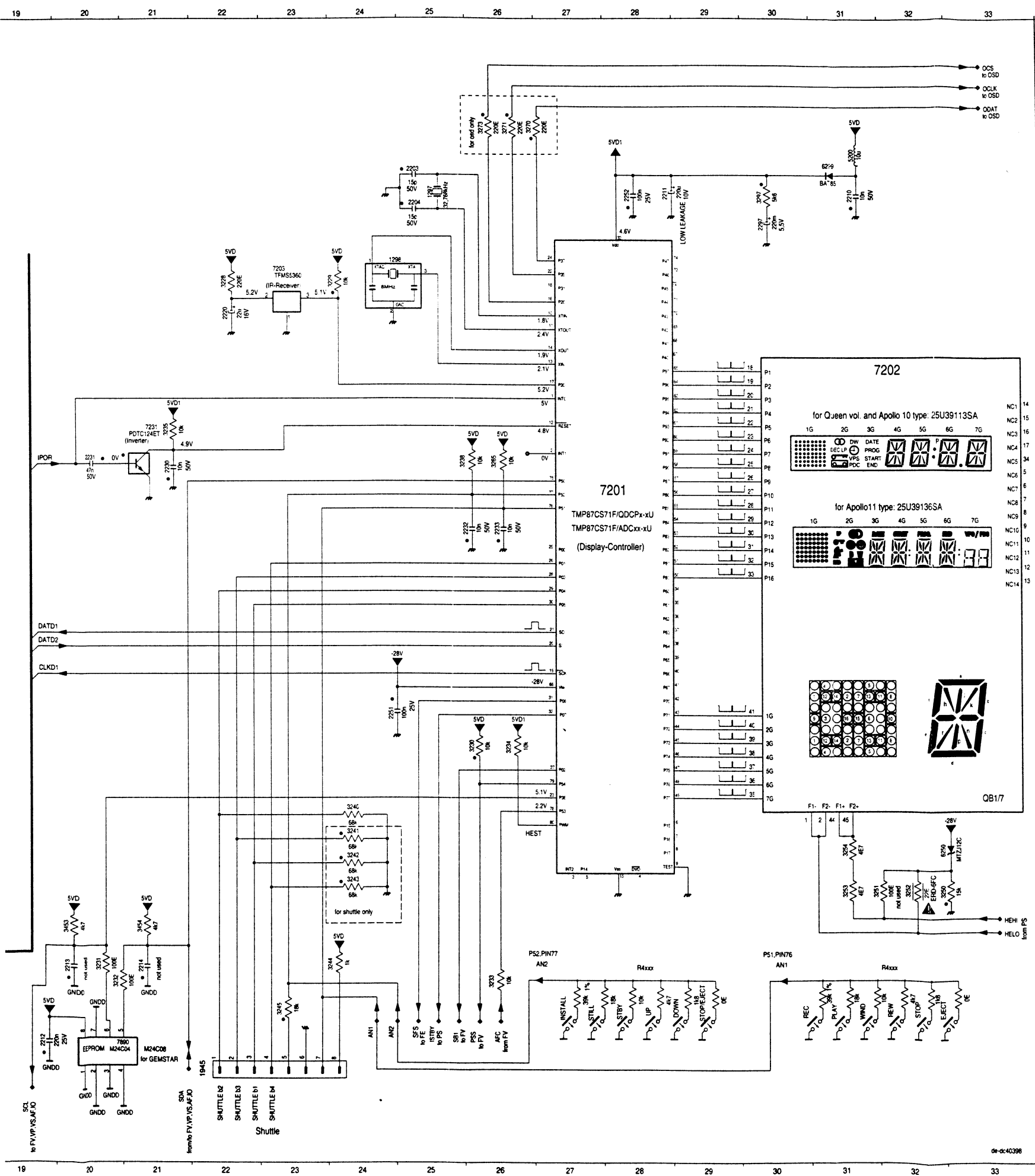
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Deck Electronics (DE)



Display Control (DC)

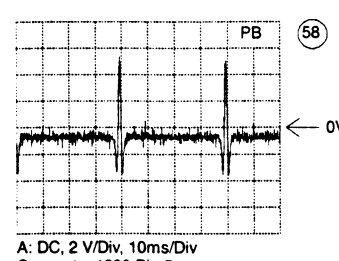
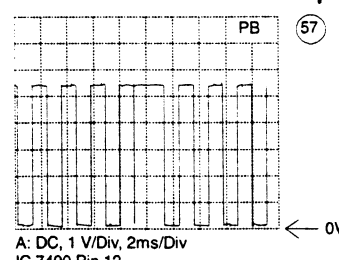
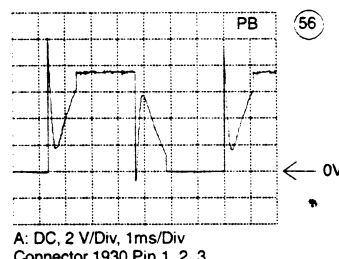
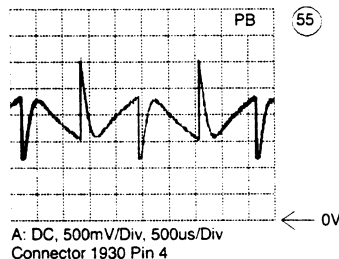
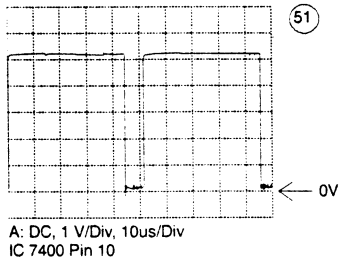
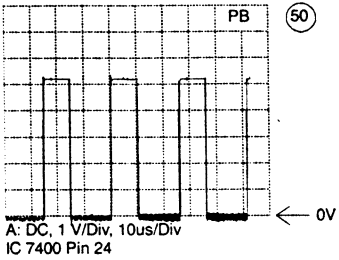


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3-11

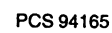
Interconnections:

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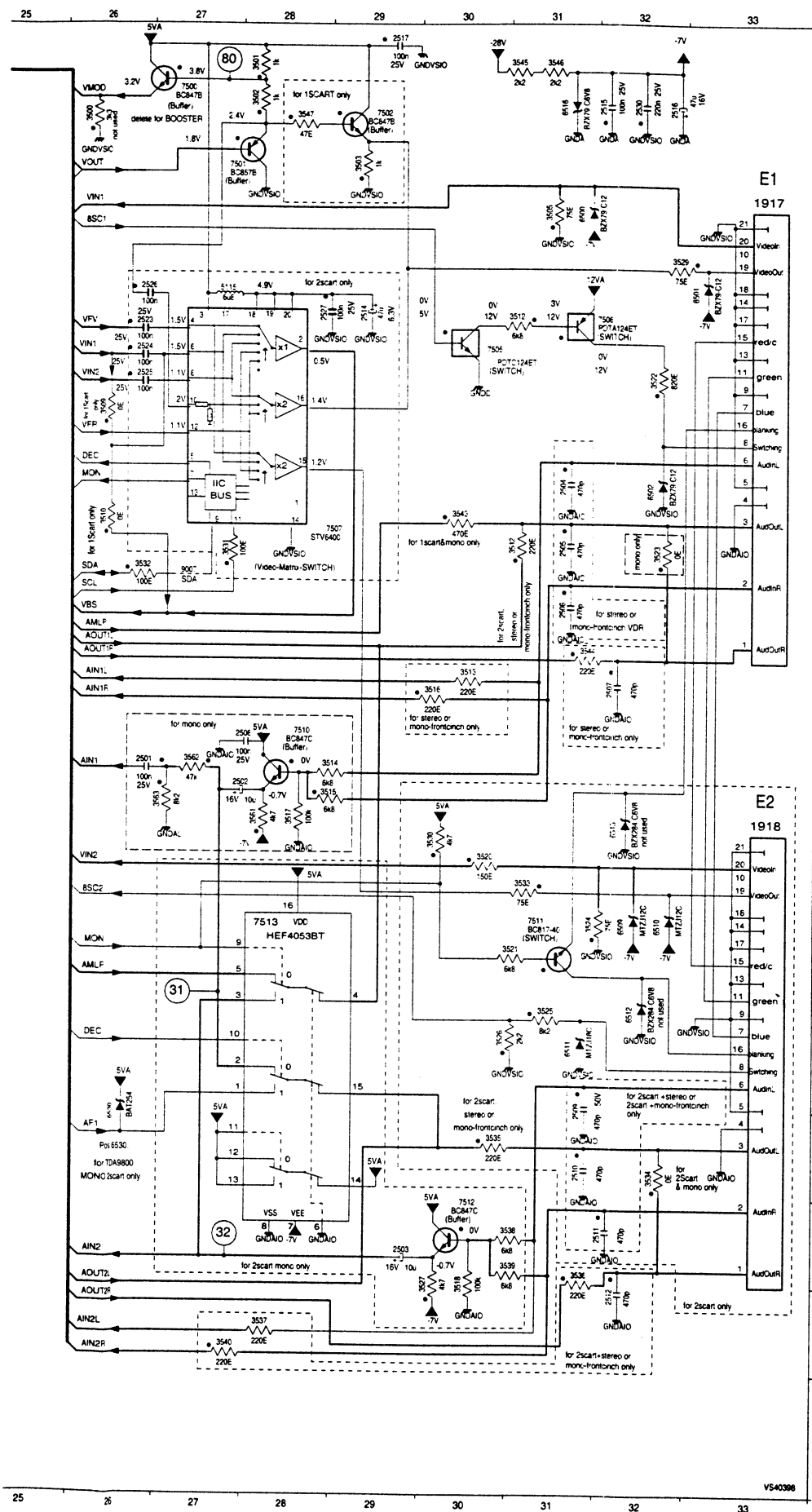


Keyfunction	4xxx	Voltage pin77 P52
STOP/EJECT	0E	0V
DOWN	1k8	0.808V
UP	4k7	1.695V
STBY	10k	2.65V
STILL	18k	3.41V
INSTALL	39k	4.22V

Keyfunction	4xxx	Voltage pin76 P51
EJECT	0E	0V
STOP	1k8	0.808V
REWIND	4k7	1.695V
WIND	10k	2.65V
PLAY	18k	3.41V
RECORD	39k	4.22V



In/Out (I/O)



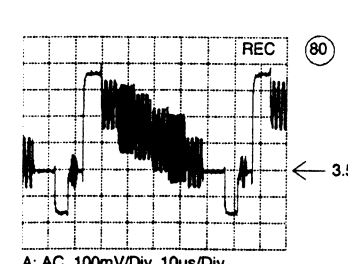
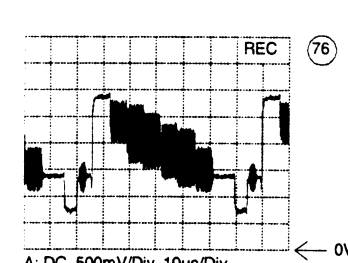
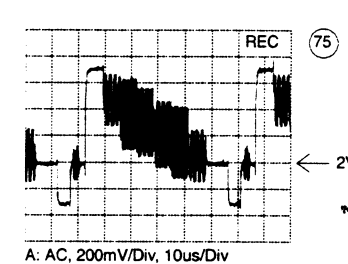
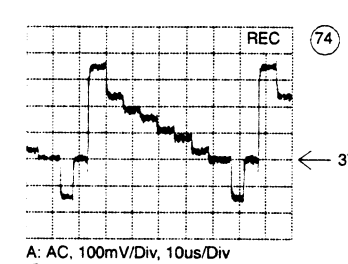
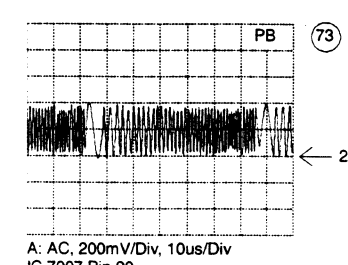
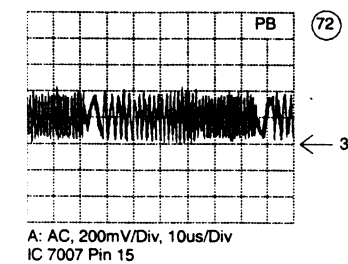
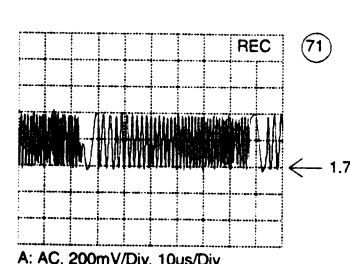
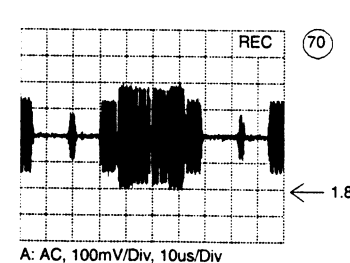
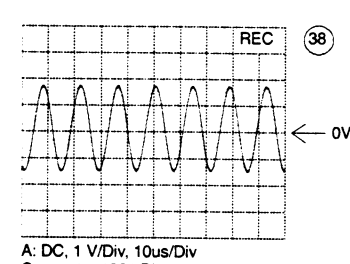
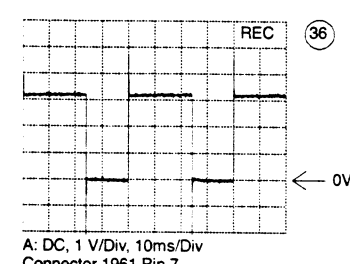
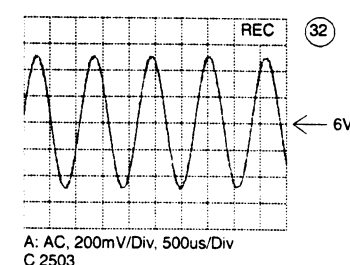
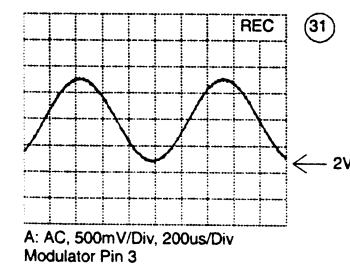
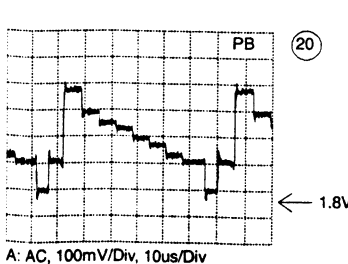
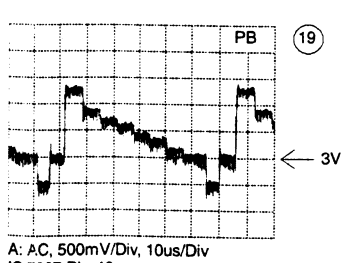
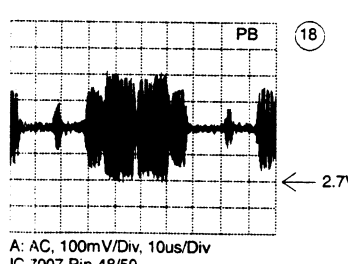
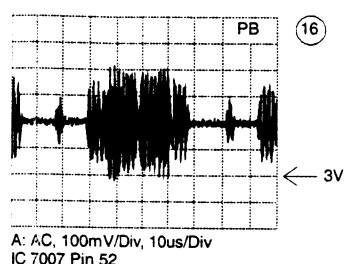
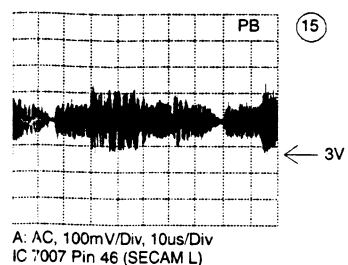
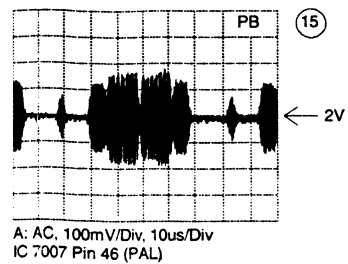
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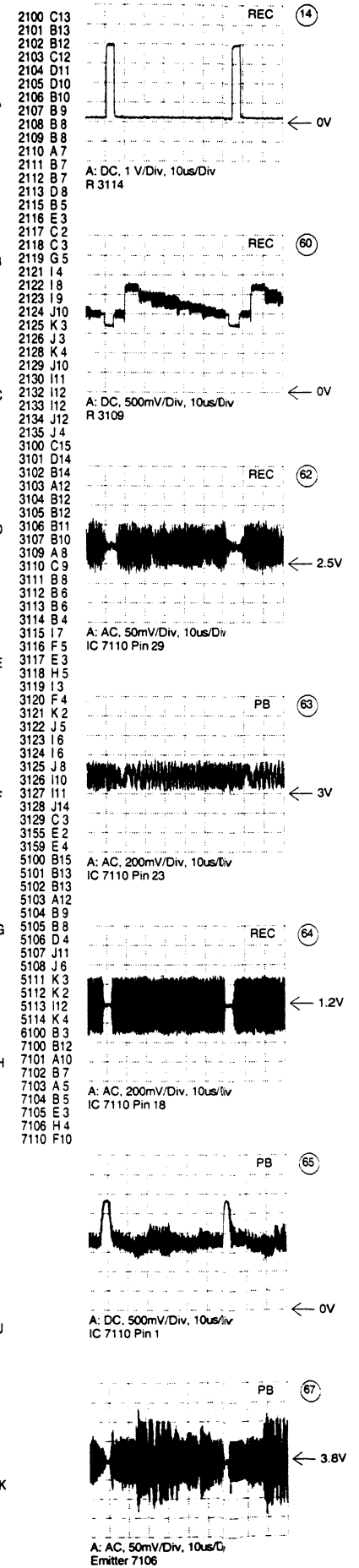
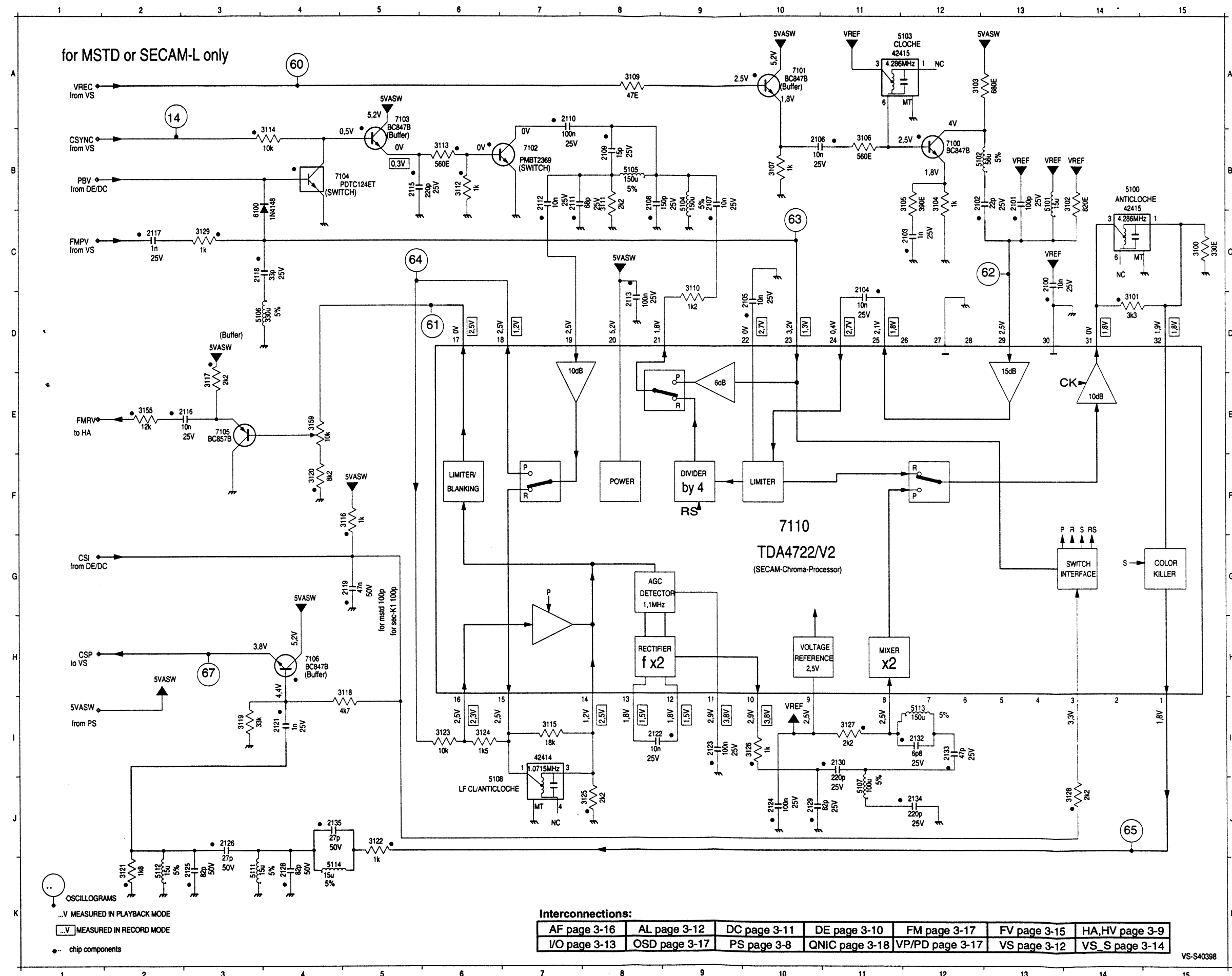
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1710 C 3	3024 N15	7506 C31
1711 P22	3025 G 8	7507 F29
1750 C 4	3026 G 8	7510 H08
1809 D 4	3027 I 3	7511 J31
1911 B 8	3028 J 3	7512 N30
1912 C 8	3029 I 7	7513 J28
1917 B33	3030 P20	7500 L 5
1918 I33	3031 P21	7601 L 5
1961 O 8	3032 N17	7602 M 5
1962 O10	3033 K 8	7603 O 4
2001 N14	3034 L 7	7604 N 4
2002 M15	3035 N17	7609 O 5
2003 N15	3036 N20	9007 F27
2004 M17	3045 M20	9013 I 7
2005 M17	3046 N19	9034 M 7
2006 N19	3047 C11	9073 N 8
2008 M18	3048 C10	9154 O12
2009 C21	3050 M16	
2010 O22	3052 E22	
2011 N22	3054 M18	
2012 K20	3055 M19	
2013 N16	3134 B 5	
2014 J20	3135 O 5	
2015 J20	3160 O13	
2016 J20	3500 A26	
2017 I20	3501 A28	
2018 N18	3502 A28	
2019 H20	3503 B29	
2020 B17	3505 B31	
2021 F20	3506 E26	
2022 K21	3510 I26	
2023 B17	3512 C31	
2024 D11	3513 H30	
2025 B18	3514 I28	
2026 P17	3515 I28	
2027 D17	3516 H30	
2028 D17	3517 I28	
2029 D16	3518 N30	
2030 A21	3519 A 4	
2031 A22	3520 J30	
2032 C16	3521 K31	
2033 C15	3522 D32	
2034 A14	3523 F32	
2035 C13	3524 J31	
2036 N20	3525 K31	
2037 L20	3526 N30	
2038 P16	3527 N30	
2039 E15	3528 I 4	
2040 D15	3529 C32	
2041 D14	3530 I30	
2042 D14	3531 F27	
2043 D13	3532 F26	
2044 M14	3533 J31	
2045 D11	3534 M32	
2046 P13	3535 M30	
2047 C17	3536 N31	
2048 D13	3537 O28	
2049 I 8	3538 N31	
2050 G 7	3539 N31	
2051 G 7	3540 O27	
2052 D10	3542 F31	
2053 O15	3543 F30	
2054 D15	3544 G31	
2055 N 9	3545 A31	
2056 N18	3546 A31	
2057 H32	3547 A28	
2058 H28	3548 I 3	
2059 L31	3551 I28	
2060 M31	3552 I27	
2061 N32	3553 I27	
2062 O12	3554 I27	
2063 O29	3555 L 5	
2064 A32	3556 K 5	
2065 A32	3557 L 4	
2066 A32	3558 J 5	
2067 A32	3559 N 9	
2068 A32	3560 N10	
2069 A32	3561 N13	
2070 A32	3562 N13	
2071 A32	3563 N13	
2072 A32	3564 N13	
2073 A32	3565 N13	
2074 A32	3566 N13	
2075 A32	3567 N13	
2076 A32	3568 N13	
2077 A32	3569 N13	
2078 A32	3570 N13	
2079 A32	3571 N13	
2080 A32	3572 N13	
2081 A32	3573 N13	
2082 A32	3574 N13	
2083 A32	3575 N13	
2084 A32	3576 N13	
2085 A32	3577 N13	
2086 A32	3578 N13	
2087 A32	3579 N13	
2088 A32	3580 N13	
2089 A32	3581 N13	
2090 A32	3582 N13	
2091 A32	3583 N13	
2092 A32	3584 N13	
2093 A32	3585 N13	
2094 A32	3586 N13	
2095 A32	3587 N13	
2096 A32	3588 N13	
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2099 A32	3591 N13	
2100 A32	3592 N13	

Interconnections:

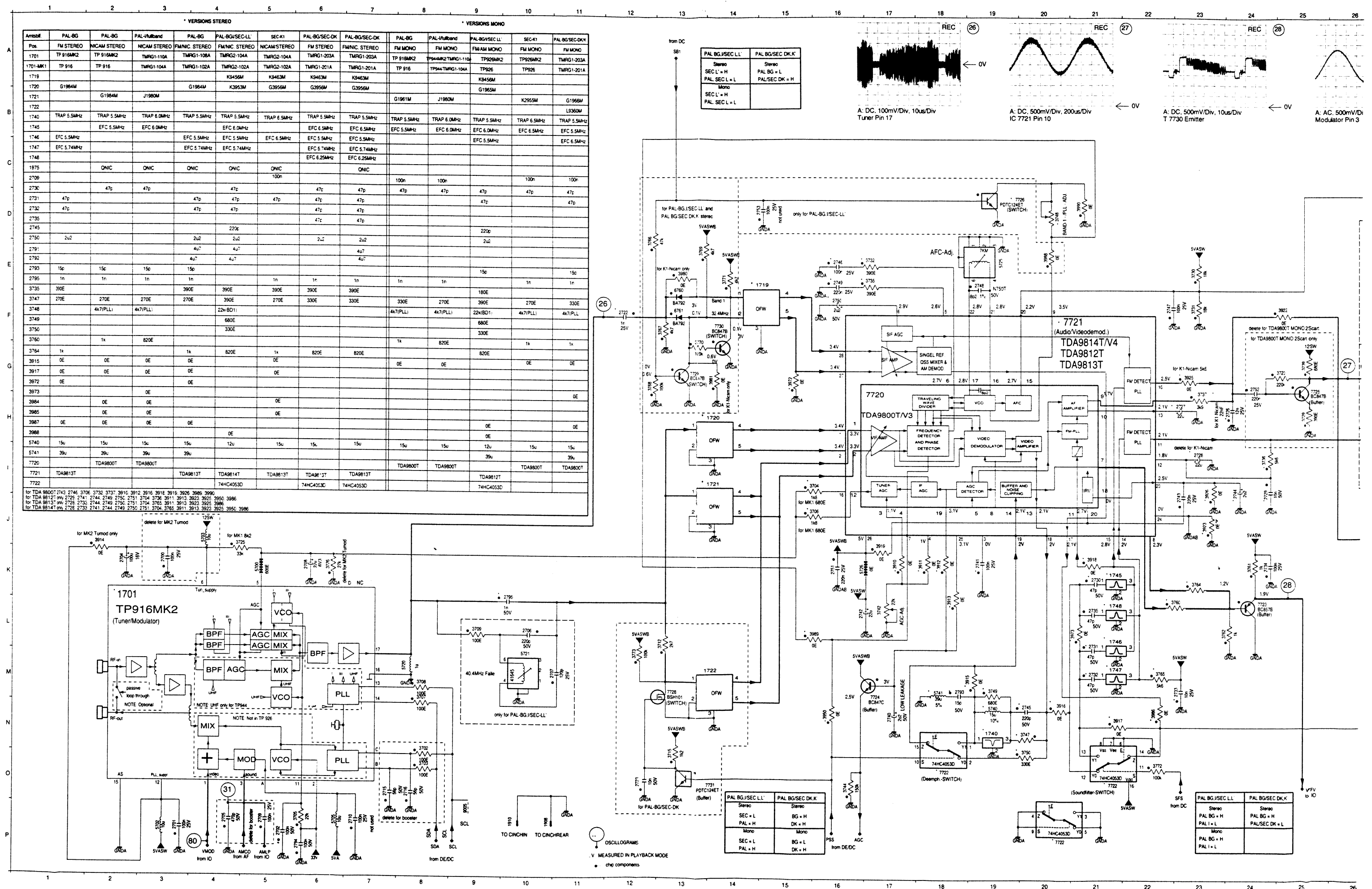
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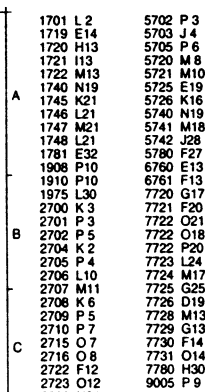


Video Signal Processing Secam (VS_S)



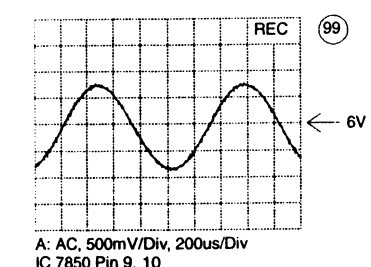
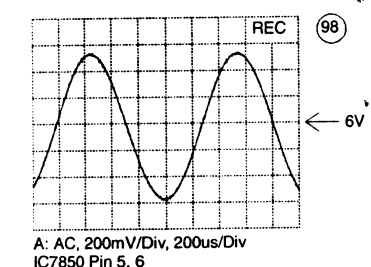
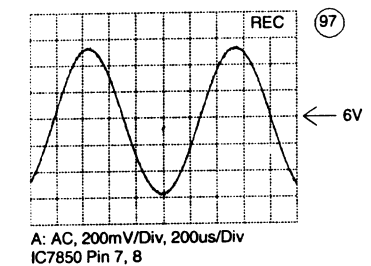
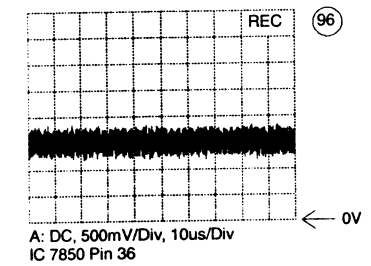
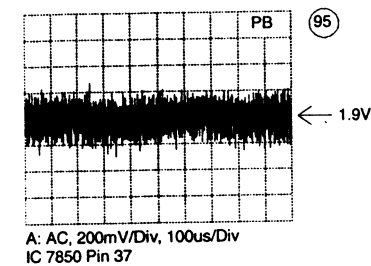
Frontend (FV)



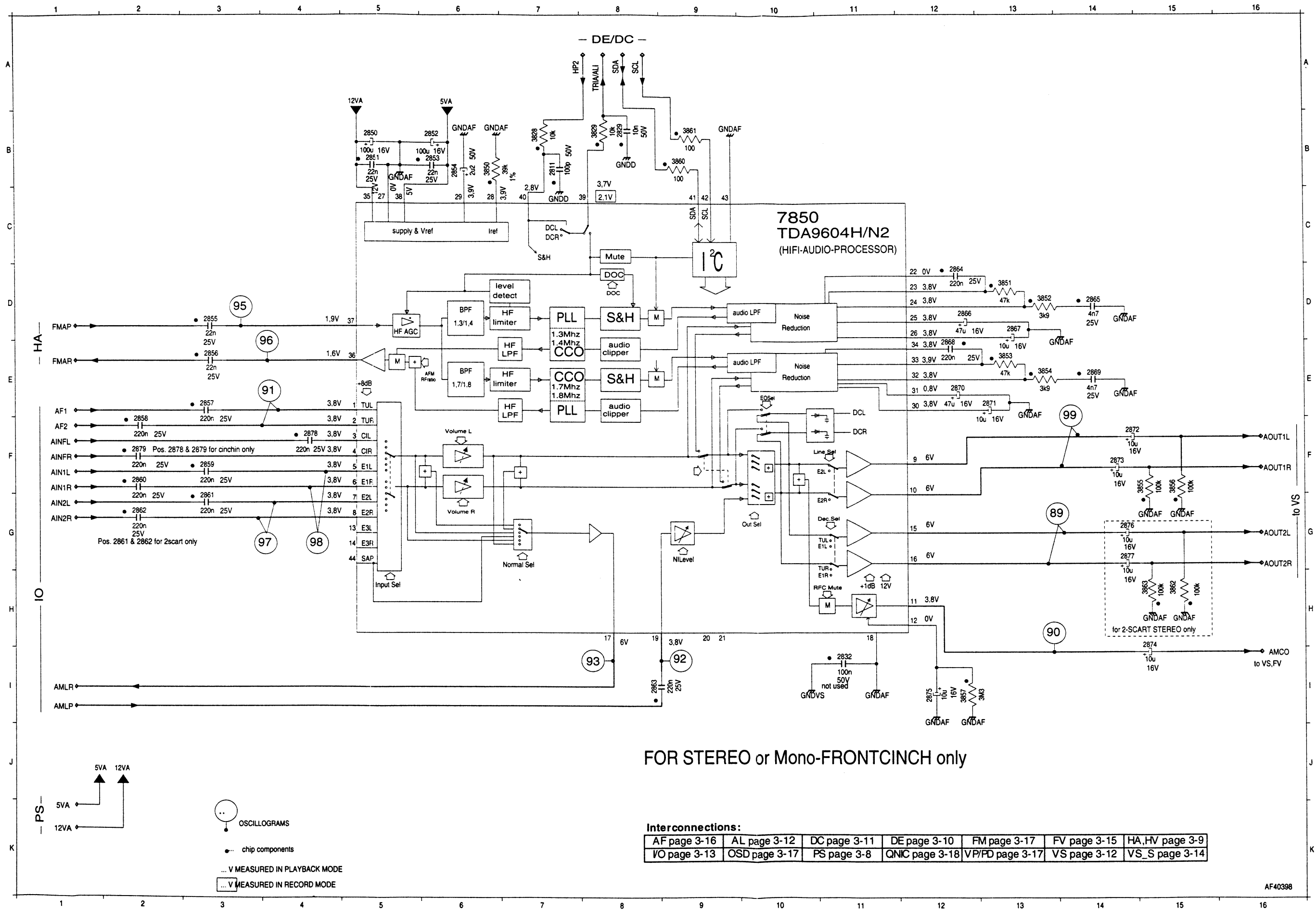


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FV40398

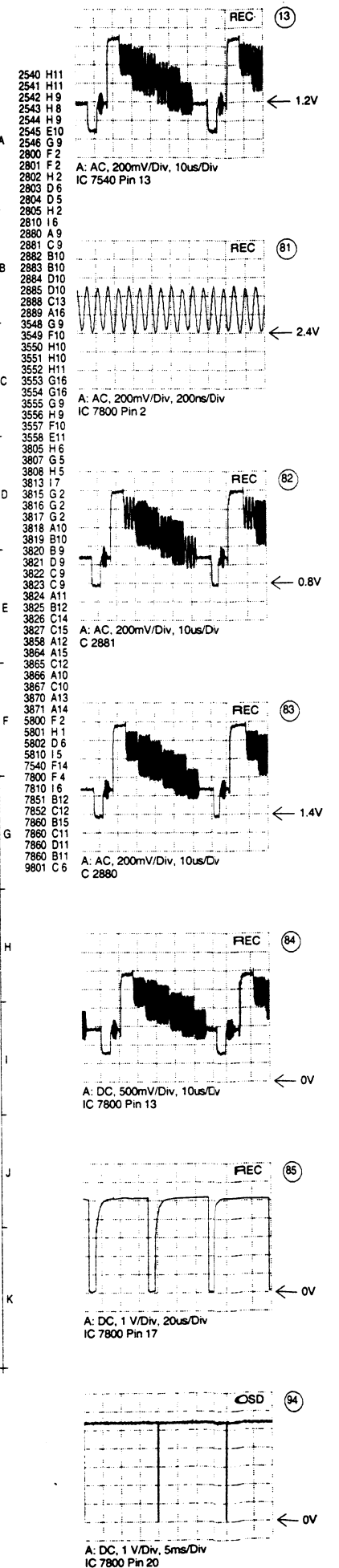
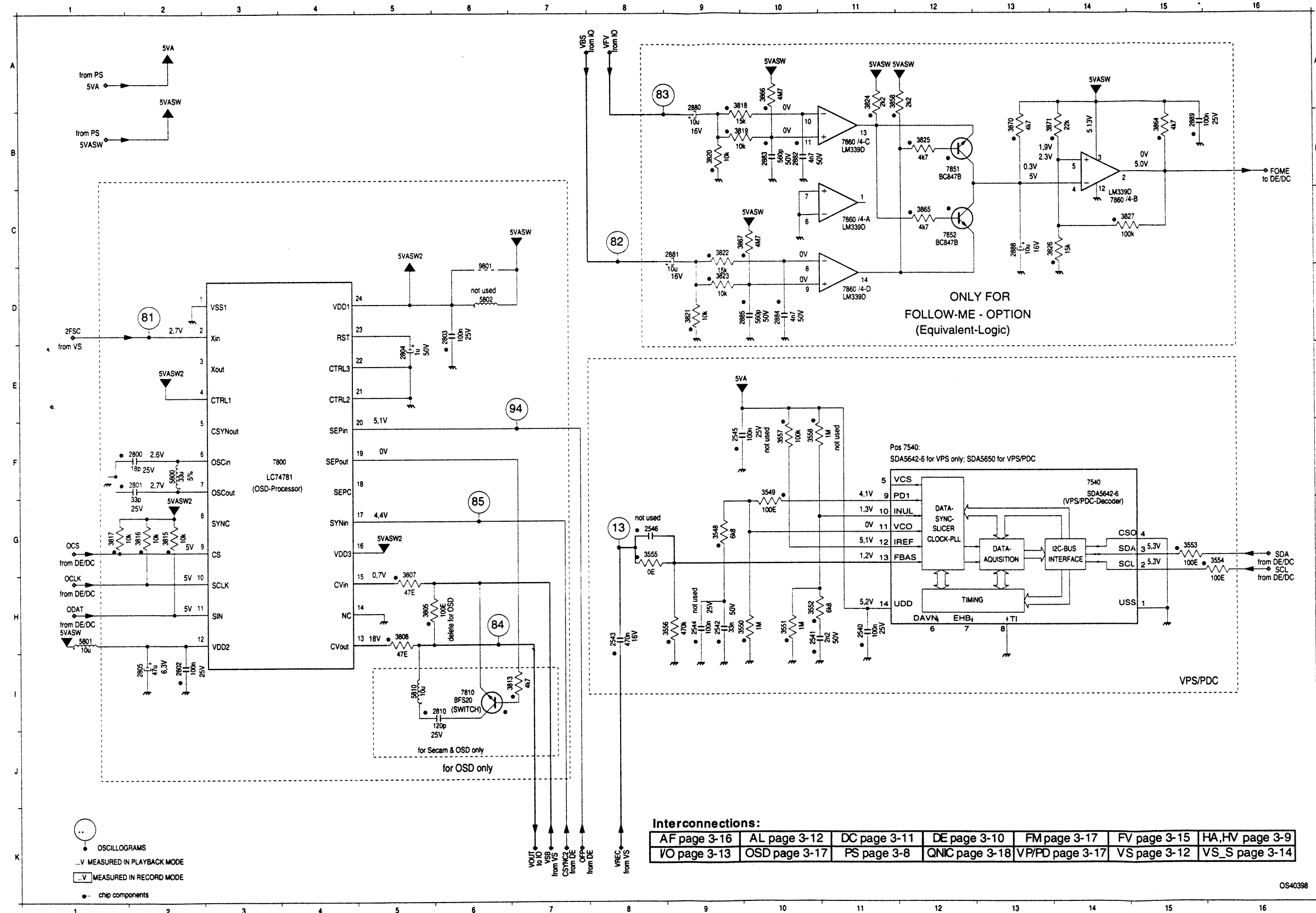


Audio FM Processing (AF)

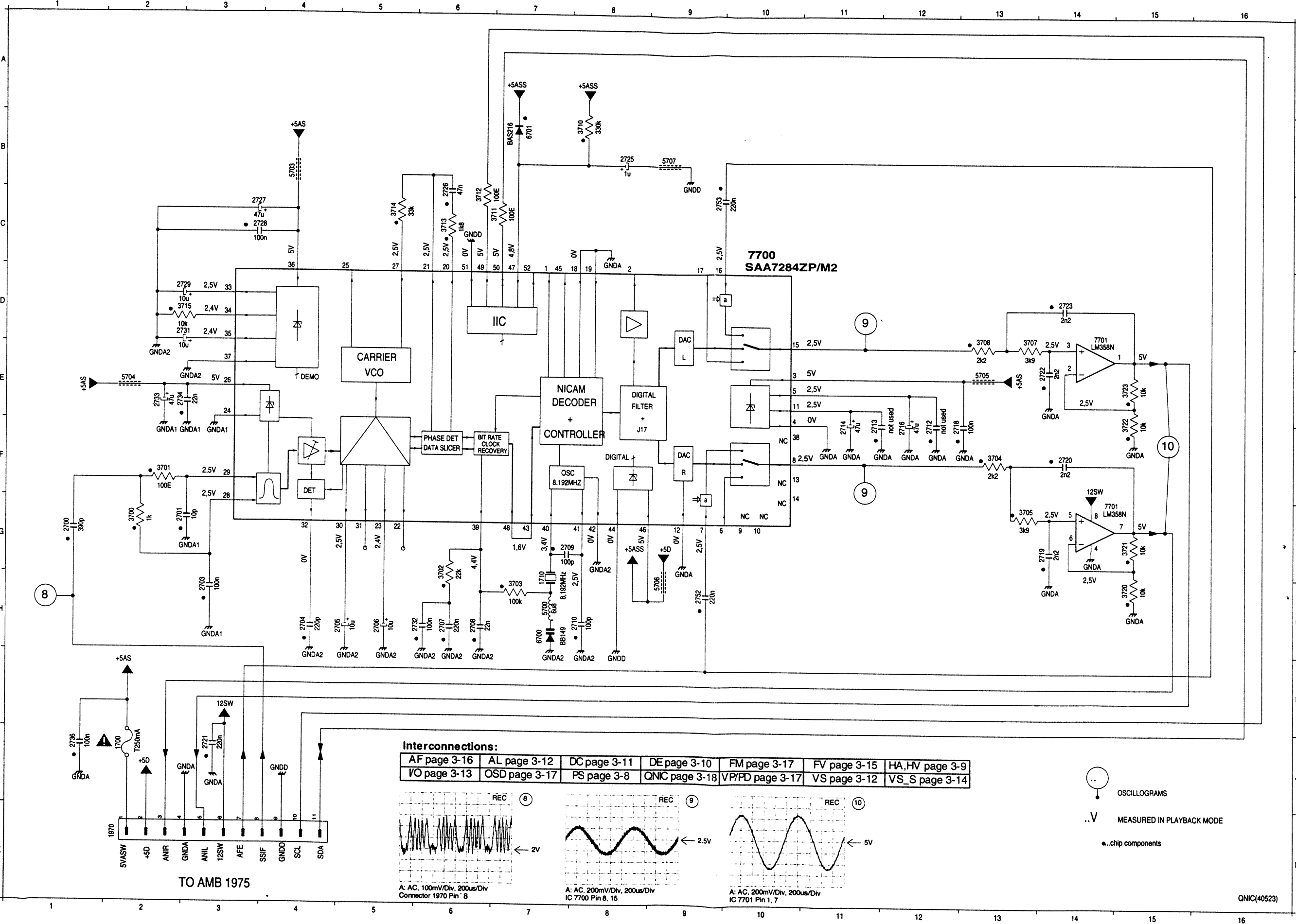


2811 B 7
2820 B 8
2832 I11
2850 B 5
2851 B 5
2852 B 6
2853 B 6
2854 B 6
2855 D 3
2856 E 3
2857 E 3
2858 F 2
2859 F 3
2860 F 2
2861 G 3
2862 G 2
2863 I 8
2864 D12
2865 D14
2866 D12
2867 D13
2868 E12
2869 E14
2870 E12
2871 E13
2872 F14
2873 F14
2874 I15
2875 I12
2876 G14
2877 G14
2878 F 4
2879 F 2
3828 B 7
3829 B 8
3850 B 6
3851 D13
3852 D13
3853 E13
3854 E13
3855 F15
3856 F15
3857 I12
3860 B 9
3861 B 9
3862 H15
3863 H15
7850 C10

On Screen Display (OS), Follow Me (FM), Video Programming System / Programm Delivery Control (VP/PD)



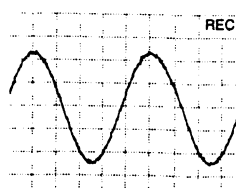
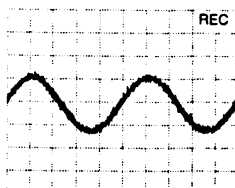
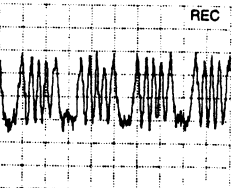
Nicam Board (QNIC)



- 1700 J2
- 1710 H7
- 1970 K2
- 2700 G1
- 2701 G2
- 2703 H3
- 2704 H4
- 2705 H5
- 2706 H6
- 2708 H6
- 2709 G7
- 2710 H8
- 2712 F12
- 2713 F11
- 2714 F11
- 2716 F12
- 2718 F12
- 2719 G14
- 2720 F14
- 2721 J3
- 2722 E14
- 2723 D14
- 2725 B8
- 2726 C6
- 2727 C3
- 2728 C3
- 2729 D2
- 2731 D2
- 2732 H6
- 2733 E2
- 2734 E2
- 2736 J1
- 2752 H9
- 2753 C9
- 2755 C9
- 3700 G2
- 3701 F2
- 3702 G6
- 3703 H7
- 3704 F13
- 3705 G13
- 3707 D13
- 3708 D13
- 3710 B8
- 3711 C7
- 3712 C6
- 3713 C6
- 3714 C5
- 3715 D3
- 3720 H15
- 3721 G15
- 3722 E15
- 3723 E15
- 3725 H7
- 3730 B4
- 3734 E2
- 3735 E13
- 3736 H9
- 3737 B9
- 3738 H7
- 3739 B7
- 3740 C7
- 3741 D14
- 3742 G14

Interconnections:

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OSCILLOGRAMS

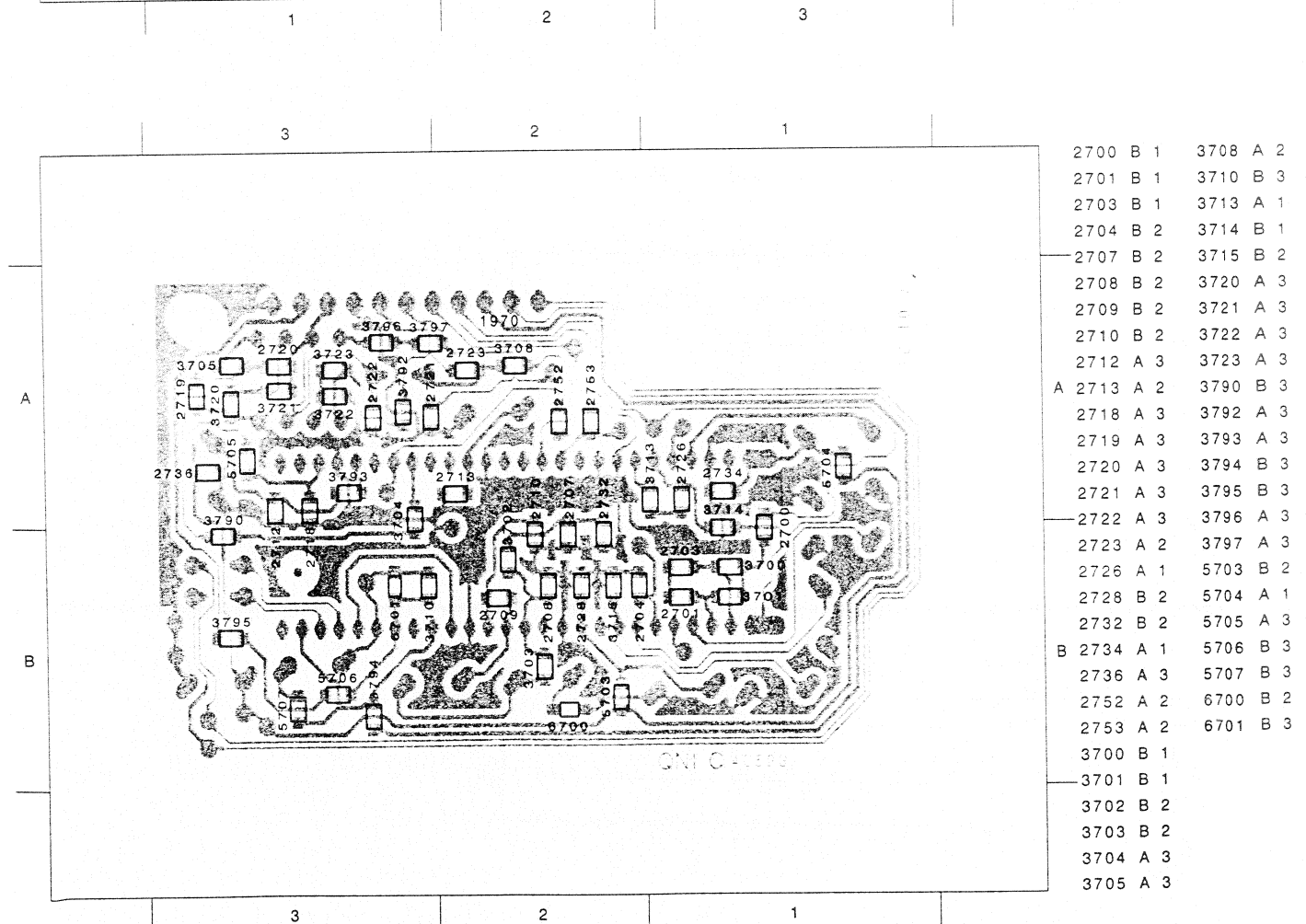
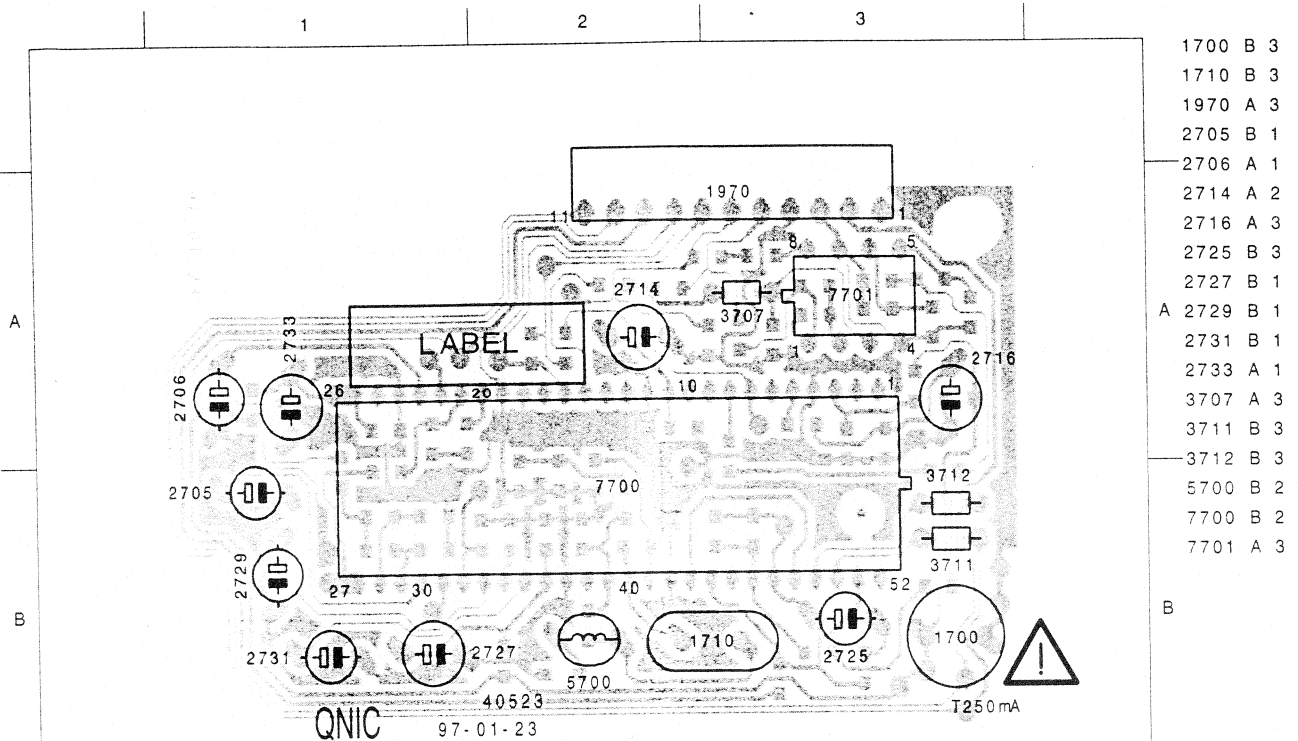
..V

MEASURED IN PLAYBACK MODE

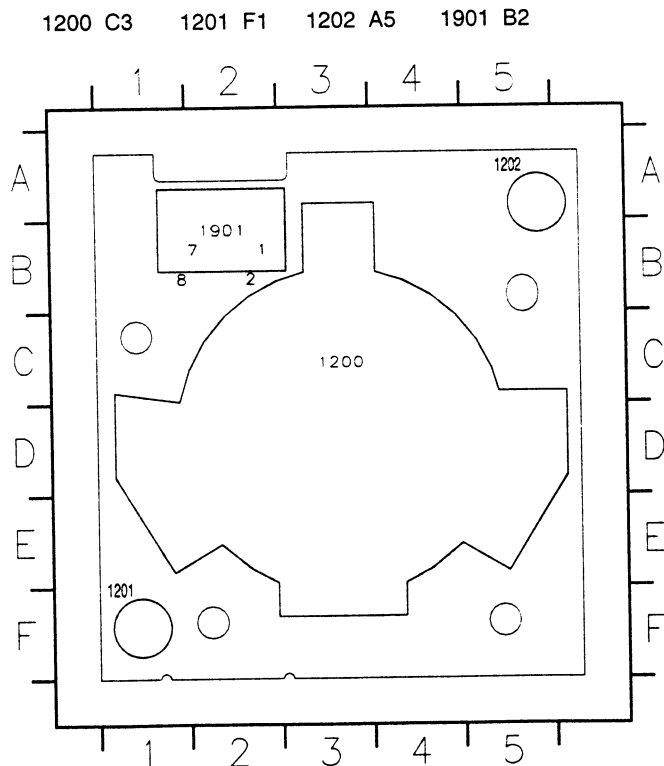
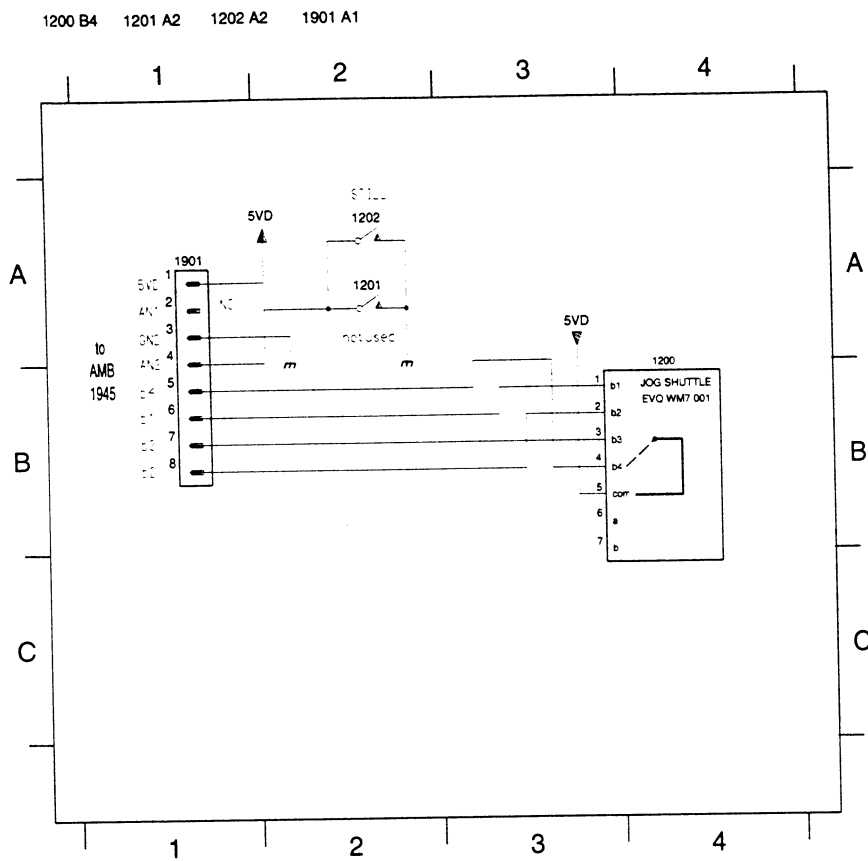
...chip components

QNIC(40523)

Nicam Board (QNIC)

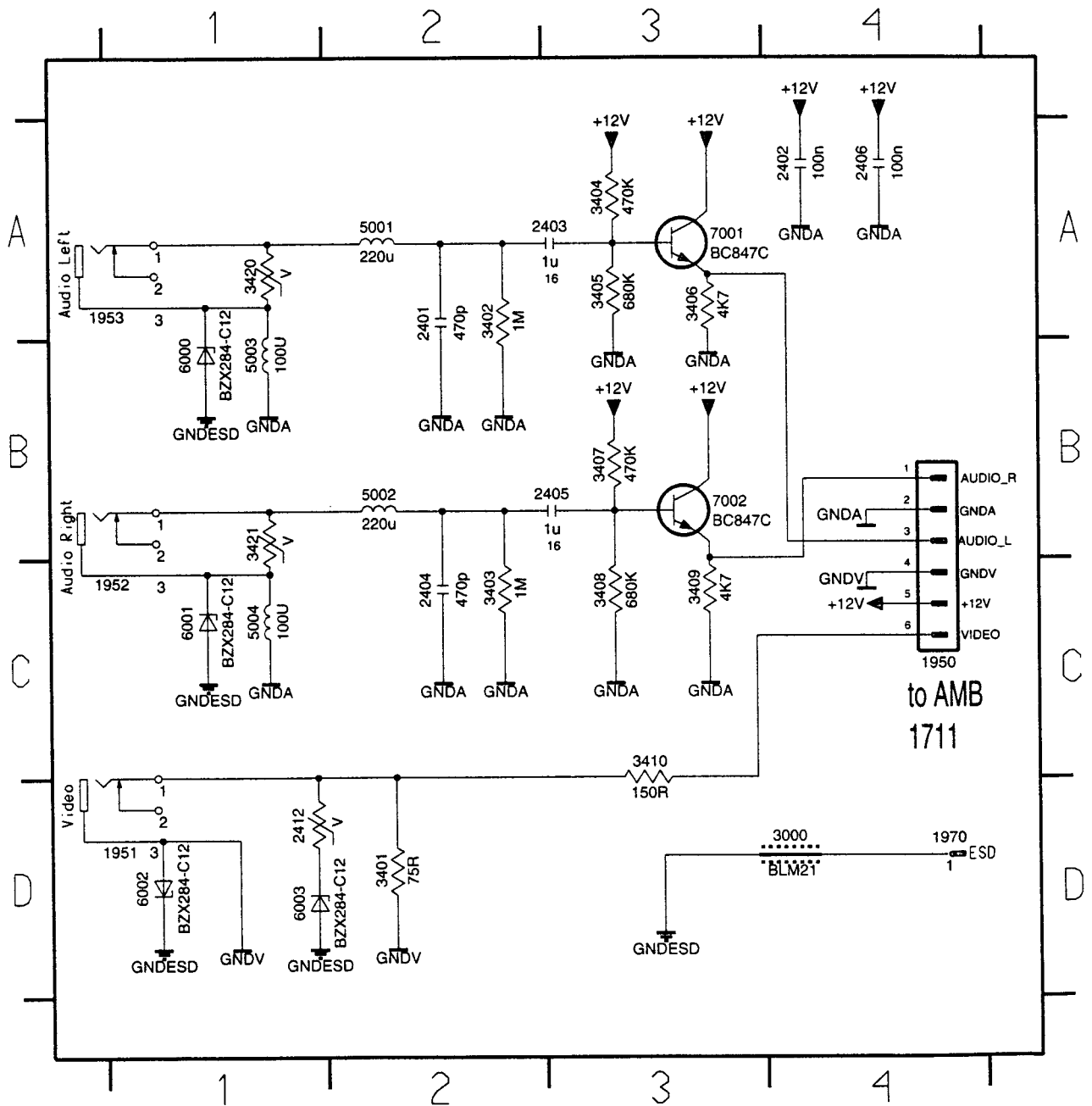


Shuttle Board (ASP10)

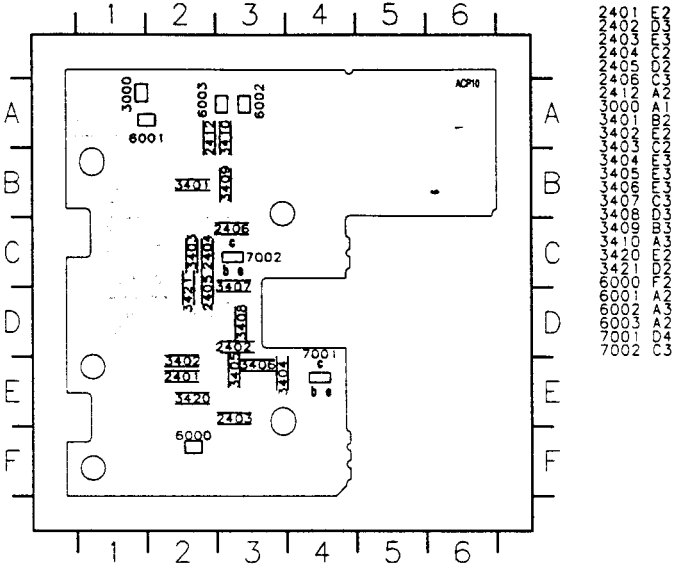
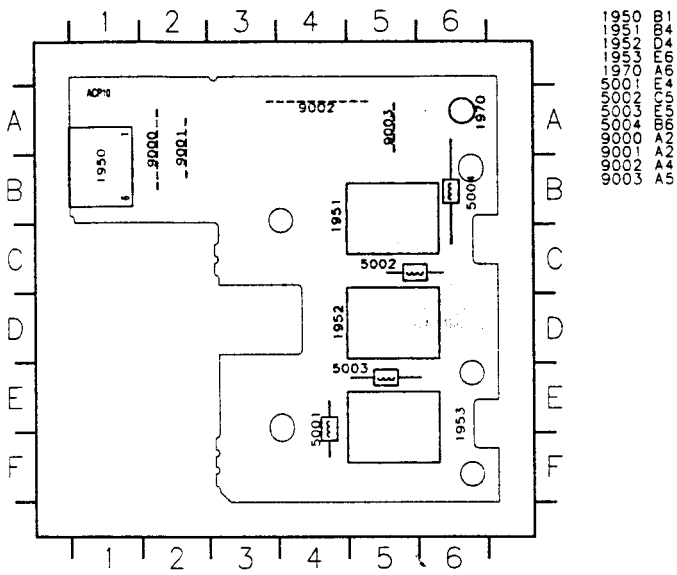


Socket Boards (ACP1x)

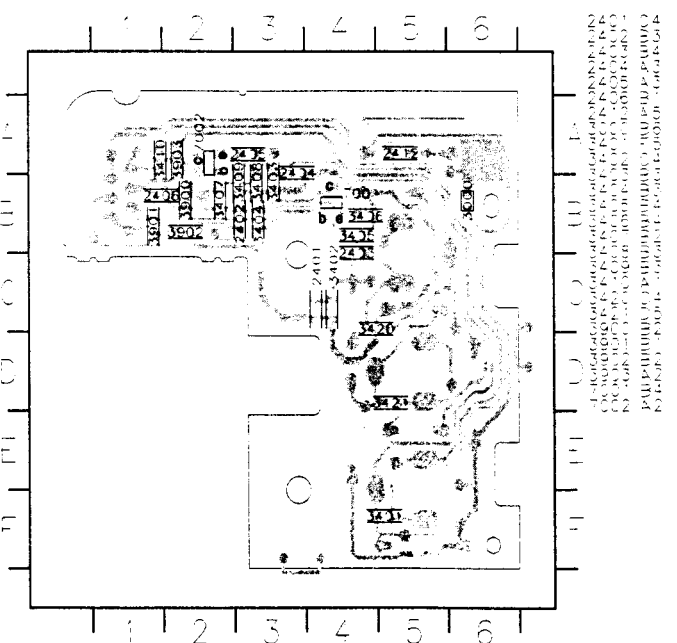
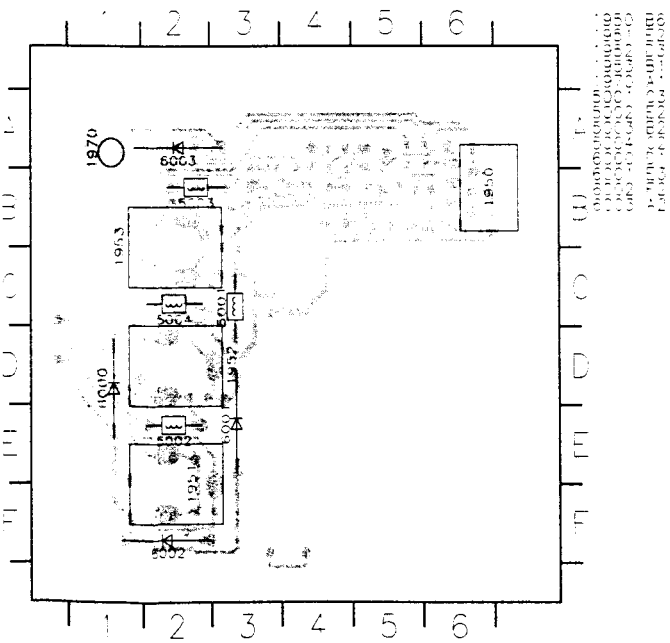
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1952	C1	2404	C2	3402	A2	3408	C3	5002	B2	6003	D1
1953	A1	2405	B3	3403	C2	3409	C3	5003	B1	7001	A3
1950	D4	2406	A4	3404	A3	3410	C3	5004	C1	7002	B3
2401	A2	2412	D1	3405	A3	3420	A1	6000	B1		



Socket Boards (ACP10)



Socket Boards (ACP1)



4. DRIVE ASSEMBLY

4.1 MECHANICAL PARTS LIST

Pos.	Description	K I T S							Code number 4822
		B	I	L	P	Q	R	S	
1	Rec. protection lever (with spring)								402 10202
2	Chassis mounting spring (2x)								492 71022
5	Main brake left				P				
6	Main brake spring (2x)				P				
9	Damping roller *)								528 70782
10	Main brake right				P				
11	Tension arm spring								492 33317
12	Tension crank								403 70551
13	Slip ring						R		
14	Tension band				P				
15	Tension arm								403 70547
16	Erase head								249 10522
17	Swivelling gear						R		
18	Brake gear (2x)						R		
19	Swivelling plate						R		
20	Reel table (S)						R		
20a	Reel table (T)						R		
21	Headamplifier holder							T	
22	Bracket							T	
23	Roller unit left								528 70771
24	Loading arm left	B							
25	Loading arm right	B							
26	Roller unit right								528 70772
27	Loading gear	B							
30	Reverse clip					Q			
31	Reverse lever					Q			
32	Intermediate lever					Q			
33	Head disc 2/0								691 10583
33	Head disc 2/0-LP								691 10585
34	Scanner motor 2/0 (with screws)								361 10963
34	Scanner assy. 4/0 (Head disc and motor)								218 12031
34	Scanner assy. 4/2 (Head disc and motor)								218 12032
35	Cleaning roller								528 70773
36	A/C Head (with clip and screws)								249 10468
37	Pressure roller (with spring)								528 70774
38	Threading motor								361 10809
39	Threading belt								358 20421
40	Motor holder							T	
41	Pressure roller guide						S		
42	Reverse brake				P				
44	Slider gear	B					S		
45	Cam wheel						S		
46	Cam shaft						S		
47	Pulley shaft								528 81462
48	Worm shaft						S		
49	Chassis mounting clip							T	
50	WD-holder							T	

Pos.	Description	K I T S							Code number 4822
		B	I	L	P	Q	R	S	
101	Cassette loader trigger			L					
102	Clip			L					
103	Cassette loader gear1			L					
104	Cassette loader spring			L					
105	Cassette loader gear2			L					
106	Spindle								535 93277
111	Cam wheel reverse	B							
112	Tension lever							T	
113	Cam wheel tension	B							
114	Clutch lever (with spring)								403 70549
115	Clutch								528 20736
116	Changing gear		I						
117	Double gear		I						
118	Light prism							T	
119	Init flap and holder							T	
120	Cam wheel lever							T	
121	S-VHS lever							T	
122	Prism right							T	
123	Prism left							T	
125	Main slider							T	
126	Driving belt								358 31166
127	Capstan motor (with screws)								361 10805
129	Reverse kicker with transmission gears *)								522 20451
128	Gear pulley		I						
150	Lift								443 64112
KIT	B								310 31955
KIT	I								310 31963
KIT	L								310 32116
KIT	P								310 32191
KIT	Q								310 10658
KIT	R								310 10659
KIT	S								310 10661
KIT	T								310 10662

*) optional

Um eine hohen Reparaturstandard zu gewährleisten sind mit Ausnahme von Kit T immer alle im Kit enthaltenen Teile zu tauschen.

In order to guarantee a high repair standard all spare parts included in a kit have to be replaced with the exception of kit T.

Per una riparazione garantita occorre sostituire tutti i pezzi contenuti nei kit, fatta eccezione per il kit T.

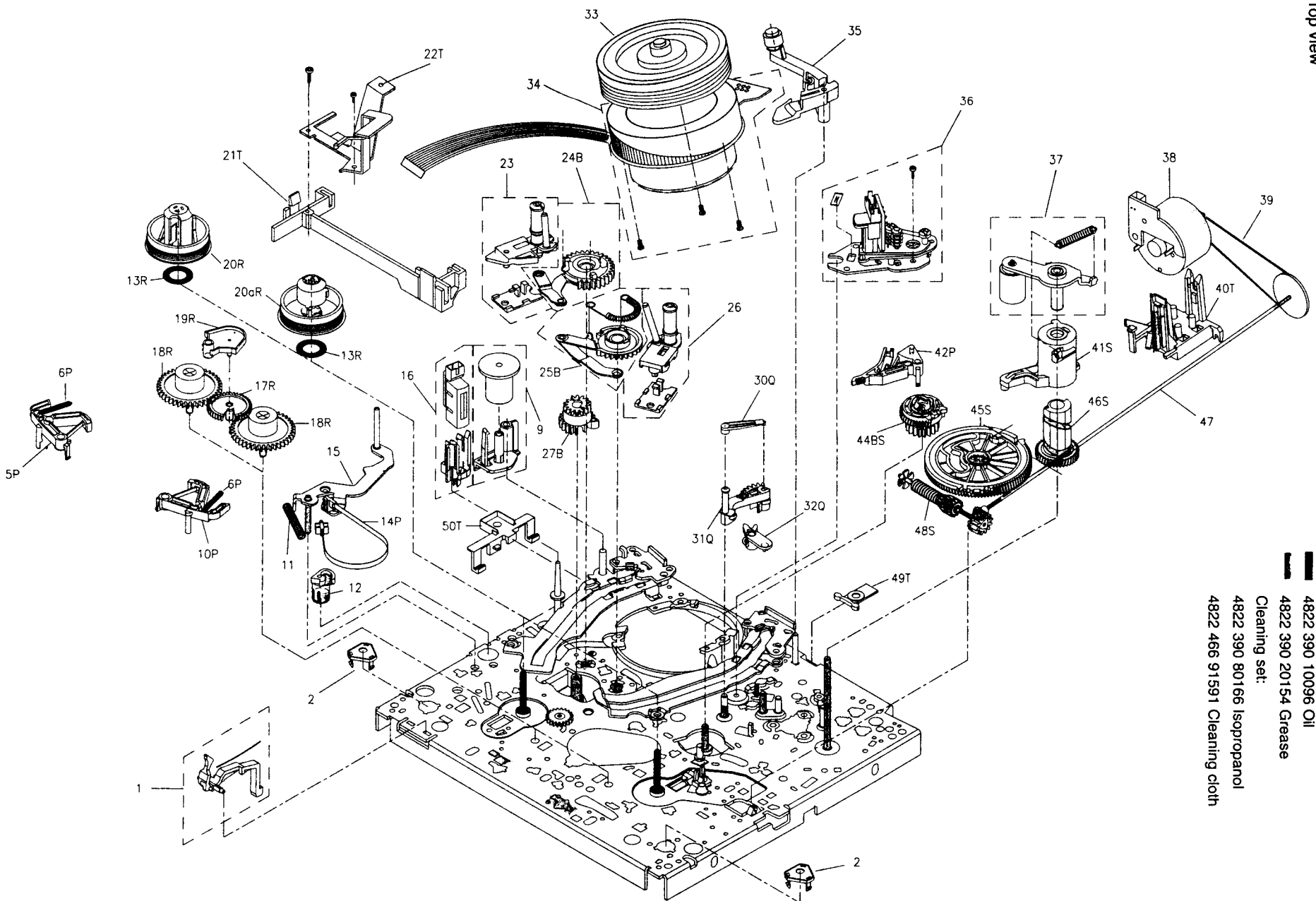
Para obtener un estándar de reparaciones elevado es necesario cambiar todas las partes contenidas en el kit, la única excepción es para el kit T.

A fin d'obtenir un standard de réparations élevé, toutes les pièces de rechange incluses dans un kit sont à remplacer, exception faite du kit T.

Om een hoge reparatiekwaliteit te waarborgen moeten, met uitzondering van kit T, altijd alle zich in een kit bevindende onderdelen worden vervangen.

4.2 Exploded view

Top view



4822 390 10096 Oil

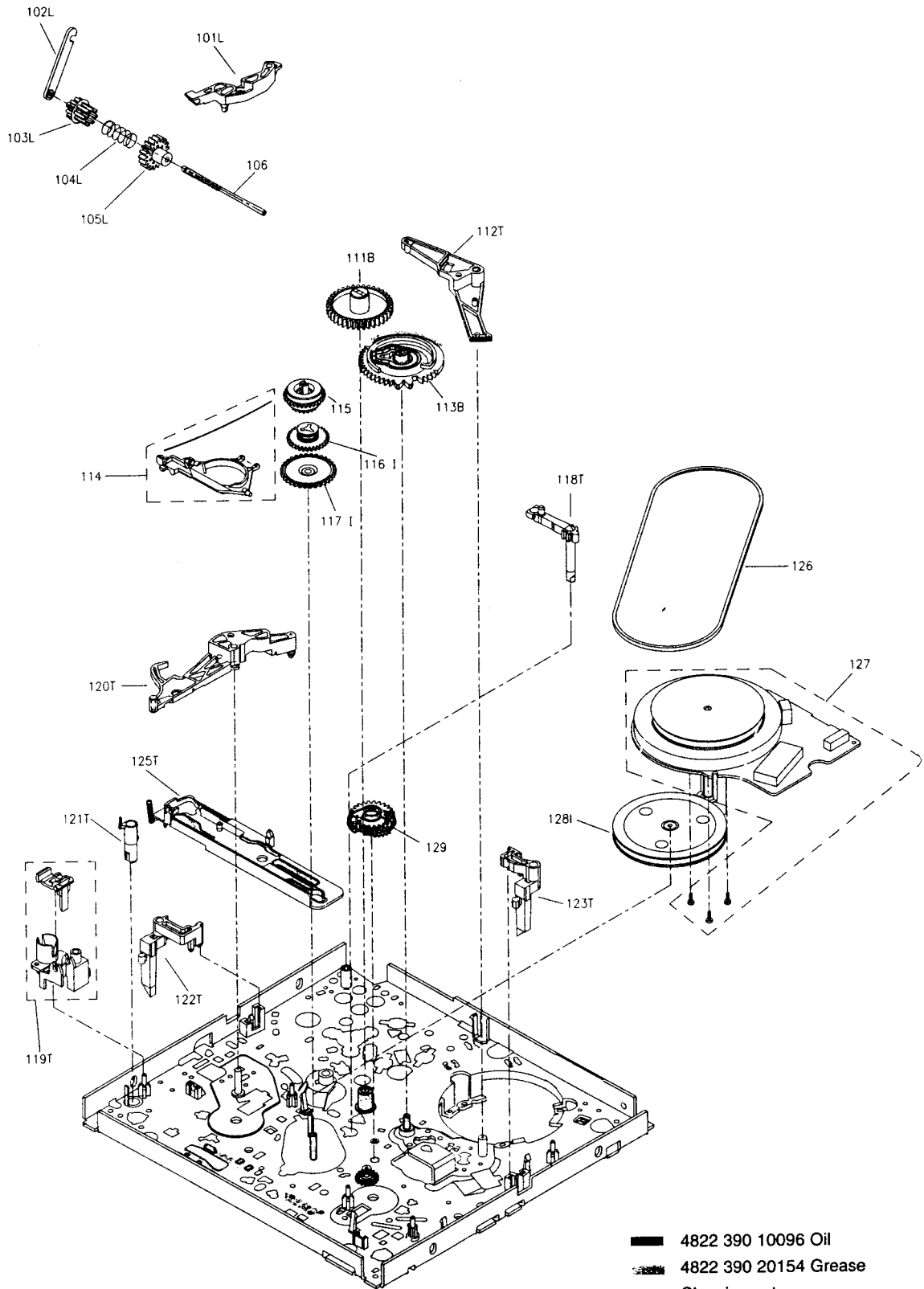
4822 390 20154 Grease

Cleaning set:

4822 390 80166 Isopropanol

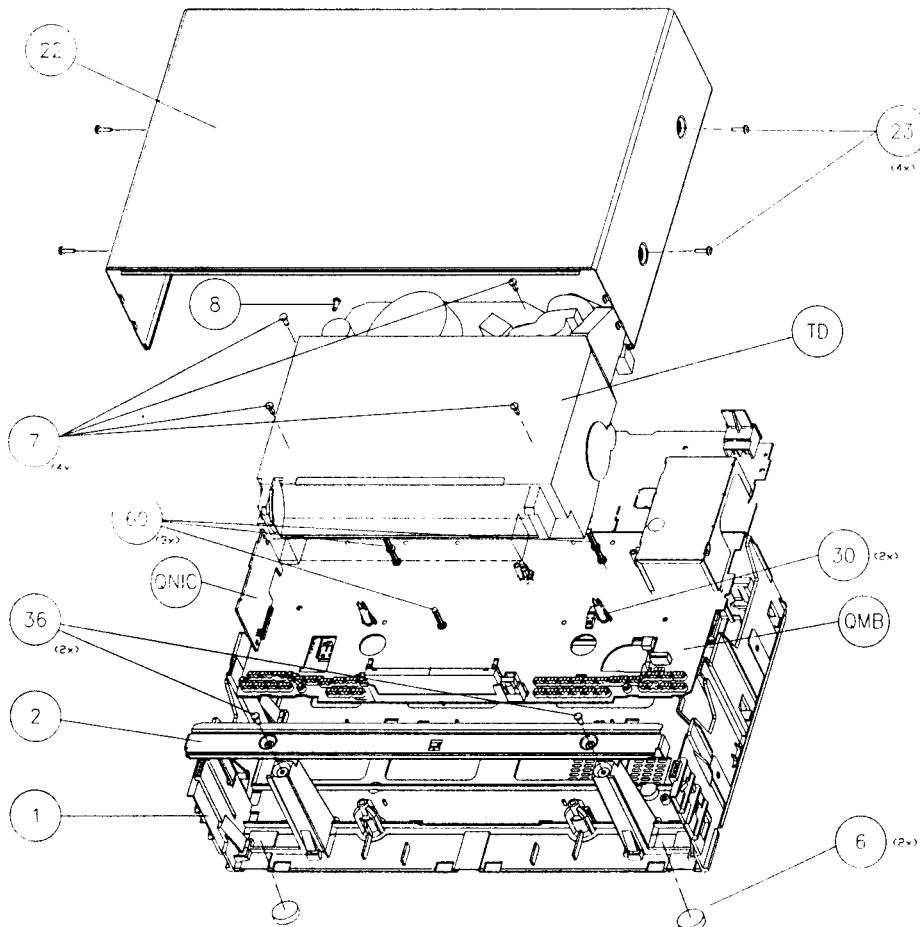
4822 466 91591 Cleaning cloth

Underside view



- 4822 390 10096 Oil
- 4822 390 20154 Grease
- Cleaning set:
- 4822 390 80166 Isopropanol
- 4822 466 91591 Cleaning cloth

Exploded view set



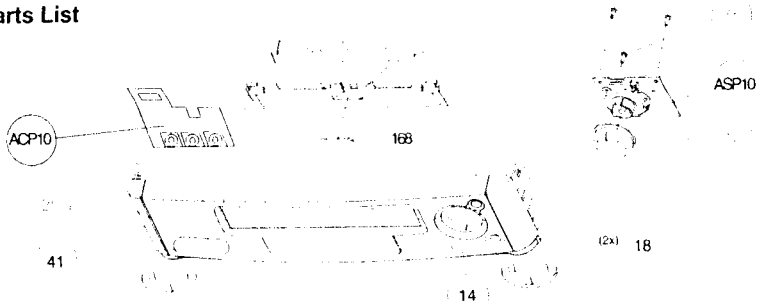
Set Parts List

Pos	Service code	Description
1	4822 464 10286	FRAME ASSY 2SCART VR2xx, VR4xx, SB230
	4822 464 10285	FRAME ASSY CINCH VR6xx, SB630
2	4822 402 10709	BRACKET
6	4822 462 41806	FOOT FRAME
7	4822 502 13884	SCREW 3,5X16
8	4822 502 14431	SCREENING SCREW
22	4822 442 01844	COVER LACQUERED
23	4822 502 14109	SCREW 3,5X10
30	4822 256 10198	DISTANCEHOLDER DECK
36	4822 502 11838	SCREW P2,9X12
60	4822 256 10359	DISTANCE HOLDER MOBO

Directions for use

Direction for use	Service code
VR200/02 DE,EN	4822 736 16949
VR200/02 DK,FI,NO,SW	4822 736 16951
VR200/02 ES,PT	4822 736 16952
VR200/02 FR,NL,IT	4822 736 16953
VR200/02 GR	4822 736 16954
VR200/05 EN	4822 736 16955
VR200/07 EN	4822 736 16956
VR200/39 FR	4822 736 16957
VR200/58 EN,PL,RO,SK,TS,HU	4822 736 16958
VR205/02 DE	4822 736 16959
VR205/02 DK,FI,NO,SW	4822 736 16961
VR205/02 FR,NL,IT	4822 736 16962
VR205/02 ES,PT	4822 736 16963
VR205/05 EN	4822 736 16964
VR250/02 DE	4822 736 16965
VR250/02 DK,FI,NO,SW	4822 736 16966
VR250/02 FR,NL,IT	4822 736 16967
VR250/02 ES,PT	4822 736 16968
VR250/07 EN	4822 736 16969
VR250/39 FR	4822 736 16971
VR250/58 EN,PL,RO,SK,TS,HU	4822 736 16972
VR400/02 DE	4822 736 16974
VR400/02 DK,FI,NO,SW	4822 736 16975
VR400/02 ES,PT	4822 736 16976
VR400/02 FR,NL,IT	4822 736 16977
VR400/02 GR	4822 736 16978
VR400/39 FR	4822 736 16979
VR400/58 EN,PL,RO,SK,TS,HU	4822 736 16981
VR450/02 FR,NL,IT,PT,ES,GR	4822 736 16982
VR450/39 FR	4822 736 16983
VR450/58 EN,PL,RO,SK,TS,HU	4822 736 16984
VR600/02 DE	4822 736 16985
VR600/02 FR,NL,IT	4822 736 16986
VR600/07 EN	4822 736 16987
VR600/13 DK,FI,NO,SW	4822 736 16989
VR600/13 GR	4822 736 16988
VR600/16 FR,NL,PT,ES	4822 736 16991
VR600/39 FR	4822 736 16992
VR605/02 DE	4822 736 16993
VR605/02 FR,NL,IT	4822 736 16994
VR605/07 EN	4822 736 16995
VR605/13 DK,FI,NO,SW	4822 736 16997
VR605/16 FR,NL,PT,ES	4822 736 16998
VR605/39 FR	4822 736 16999
VR605/58 EN,PL,RO,SK,TS,HU	4822 736 17001
SB230/02 DE	4822 736 16942
SB230/02 DK,FI,NO,SW	4822 736 16943
SB230/02 FR,NL,IT	4822 736 16944
SB230/02 ES,PT	4822 736 16945
SB630/02 DE,FR,NL,IT	4822 736 16946
SB630/13 DK,FI,NO,SW	4822 736 16947
SB630/16 FR,NL,PT,ES	4822 736 16948

Front Parts List



Pos	Service code	Description
14	4822 454 13469	WORDMARK TURBO DRIVE
18	4822 462 11184	FOOT PANEL
20	4822 426 10864	CONTROL PANEL VR200/02
	4822 426 10865	CONTROL PANEL VR200/05, VR200/07
	4822 426 10866	CONTROL PANEL VR200/39
	4822 426 10867	CONTROL PANEL VR200/58
	4822 426 10868	CONTROL PANEL VR205/02
	4822 426 10869	CONTROL PANEL VR205/05
	4822 426 10871	CONTROL PANEL VR250/02, VR250/58
	4822 426 10872	CONTROL PANEL VR250/07
	4822 426 10873	CONTROL PANEL VR250/39
	4822 426 10874	CONTROL PANEL VR400/02, VR400/58
	4822 426 10875	CONTROL PANEL VR400/39
	4822 426 10876	CONTROL PANEL VR450/02, VR450/58
	4822 426 10877	CONTROL PANEL VR450/39
	4822 426 10878	CONTROL PANEL VR600/02
	4822 426 10879	CONTROL PANEL VR600/07, VR600/16
	4822 426 10881	CONTROL PANEL VR600/13, VR600/16
	4822 426 10882	CONTROL PANEL VR600/39
	4822 426 10883	CONTROL PANEL VR605/02
	4822 426 10884	CONTROL PANEL VR605/07, VR605/16, VR605/58
	4822 426 10885	CONTROL PANEL VR605/13, VR605/16, VR605/58
	4822 426 10886	CONTROL PANEL VR605/39
	4826 426 10861	CONTROL PANEL SB230/02
	4827 426 10862	CONTROL PANEL SB630/02
	4828 426 10863	CONTROL PANEL SB630/13, SB630/16
20/6	4822 443 11223	LIFT FLAP VR200/02, VR200/05, VR200/07
	4824 443 11224	LIFT FLAP VR200/39
	4825 443 11225	LIFT FLAP VR200/58
	4826 443 11226	LIFT FLAP VR205/02, VR205/05
	4828 443 11227	LIFT FLAP VR250/02, VR250/07, VR250/58
	4830 443 11228	LIFT FLAP VR250/39
	4832 443 11229	LIFT FLAP VR400/02, VR400/58
	4833 443 11231	LIFT FLAP VR400/39
	4835 443 11232	LIFT FLAP VR450/02, VR450/58
	4836 443 11233	LIFT FLAP VR450/39
	4838 443 11234	LIFT FLAP VR600/02
	4839 443 11235	LIFT FLAP VR600/07, VR600/13, VR600/16
	4842 443 11236	LIFT FLAP VR600/39
	4843 443 11237	LIFT FLAP VR605/02
	4844 443 11238	LIFT FLAP VR605/07, VR605/13, VR605/16, VR605/39, VR605/58
	4849 443 11221	LIFT FLAP SB230/02
	4850 443 11222	LIFT FLAP SB630/02, SB630/13, SB630/16
20/7	4842 492 70896	LEG SPRING
	4822 410 12458	SHUTTLE KNOB
32	4822 502 11839	SCREW 2.9X8
35	4822 442 01838	COVER CINCH FRONT VR250, VR450, SB630
41	4822 442 01839	COVER CINCH FRONT VR250/39, VR450/39
	4822 442 01842	COVER CINCH FRONT VR600, VR605
	4822 442 01843	COVER CINCH FRONT VR600/39, VR605/39
168	4822 549 10886	WORDMARK PHILIPS

Motherboard PAL, SECAM, MONO, STEREO

CONNECTORS

1001▲	4822 267 10577	MAINS PLUG
1710	4822 267 10957	CONN. 3p
1711	4822 267 41062	CONN. 6p
1750	4822 267 10955	CONN. 3p
1908	4822 267 10584	CONN. 1p
1909	4822 267 10583	CONN. 1p
1910	7822 267 10584	CONN. 1p
1911	4822 265 10938	CINCH 2p white
1912	4822 265 10939	CINCH 2p red
1915	4822 267 10364	CONN. 9p
1916	4822 267 41199	CONN. 5p
1917	4822 265 11422	SCART CONN. BLACK E1
1918	4822 264 10346	SCART CONN. BLACK E2
1930	4822 267 41062	CONN. 6p
1944	4822 265 30989	CONN. 3p
1945	4822 267 51261	CONN. 8p
1946	4822 267 10366	CONN. 8p
1961	4822 267 31512	CONN. 7p
1962	5322 268 90415	CONN. 2p

MISCELLANEOUS

0005	4822 256 10355	DISPLAY HOLDER
0007	4822 256 10195	HOLDER
0008	4822 256 10196	HOLDER
0020	4822 256 10197	HOLDER
0021	4822 256 10197	HOLDER
0022	4822 256 10197	HOLDER
1000	4822 242 81067	Crystal 4.433 619 MHz
1101	4822 276 13732	SWITCH TACT PUSH
1102	4822 276 13732	SWITCH TACT PUSH
1105	4822 276 13732	SWITCH TACT PUSH
1107	4822 276 13732	SWITCH TACT PUSH
1109	4822 276 13732	SWITCH TACT PUSH
1110	4822 276 13732	SWITCH TACT PUSH
1111	4822 276 13732	SWITCH TACT PUSH
1113	4822 276 13732	SWITCH TACT PUSH
1132	4822 276 13732	SWITCH TACT PUSH
1134	4822 276 13732	SWITCH TACT PUSH
1136	4822 276 13732	SWITCH TACT PUSH
1140	4822 276 13732	SWITCH TACT PUSH
1142	4822 276 13732	SWITCH TACT PUSH
1143	4822 276 13732	SWITCH TACT PUSH
1144	4822 276 13732	SWITCH TACT PUSH
1145	4822 276 13732	SWITCH TACT PUSH
1147	4822 276 13732	SWITCH TACT PUSH
1148	4822 276 13732	SWITCH TACT PUSH
1149	4822 276 13732	SWITCH TACT PUSH
1154	4822 276 13732	SWITCH TACT PUSH
1155	4822 276 13732	SWITCH TACT PUSH
1178	4822 276 13732	SWITCH TACT PUSH
1180	4822 276 13732	SWITCH TACT PUSH
1181	4822 276 13732	SWITCH TACT PUSH
1183	4822 276 13732	SWITCH TACT PUSH
1185	4822 276 13732	SWITCH TACT PUSH
1186	4822 276 13732	SWITCH TACT PUSH
1187	4822 276 13732	SWITCH TACT PUSH
1190	4822 276 13732	SWITCH TACT PUSH
1192	4822 276 13732	SWITCH TACT PUSH
1193	4822 276 13732	SWITCH TACT PUSH
1220	4822 276 13732	SWITCH TACT PUSH
1224	4822 276 13732	SWITCH TACT PUSH
1226	4822 276 13732	SWITCH TACT PUSH
1227	4822 276 13732	SWITCH TACT PUSH
1228	4822 276 13732	SWITCH TACT PUSH
1229	4822 276 13732	SWITCH TACT PUSH
1230	4822 276 13732	SWITCH TACT PUSH
1231	4822 276 13732	SWITCH TACT PUSH
1232	4822 276 13732	SWITCH TACT PUSH
1233	4822 276 13732	SWITCH TACT PUSH
1234	4822 276 13732	SWITCH TACT PUSH
1235	4822 276 13732	SWITCH TACT PUSH

1236	4822 276 13732	SWITCH TACT PUSH
1242	4822 276 13732	SWITCH TACT PUSH
1297	5322 242 73682	Crystal 32.768 KHZ
1298	4822 242 82114	Crystal 8.00 MHZ
1350▲	4822 071 51001	Fuse 100 mA
1351▲	4822 071 55001	Fuse 500 mA
1352▲	4822 071 55001	Fuse 500 mA
1353▲	4822 070 31252	Fuse 1.25 A
1355▲	4822 071 51002	Fuse 1.0 A
1356▲	4822 071 51002	Fuse 1.0 A
1400	4822 242 82059	Crystal 10 MHZ
1460	4822 277 11521	Switch
1461	4822 277 11521	Switch
1701	4822 210 10786	TP916MK2 PAL BG (TMRG1-108A compatible)
1701	4822 210 10787	TMRG1-110A PAL I (FULLBAND) (TP944MK2, TMRB102A comp.)
1701	4822 210 10784	TMRG1-203A PAL GK
1701	4822 210 10785	TP926MK2 Booster SECAM (TMRG2-104A compatible)
1719	4822 242 10688	OFWK9456M SEC-L'
1719	4822 242 10306	OFWK9463M SEC-DK/K-NIC
1720	4822 242 81964	G1984 FM stereo PAL-G
1720	4822 242 81737	G1965 mono SEC
1720	4822 242 10307	OFWG3956M SEC-DK/K-NIC
1720	4822 242 81436	OFWK3953M stereo SEC
1721	4822 242 81388	OFWG1961M mono PAL-G
1721	4822 242 81261	OFWG1966M mono SEC-DK
1721	4822 242 72197	OFWK2950M SEC-K'
1721	4822 242 10575	OFWJ1980M PAL-I
1721	4822 242 81964	G1984 stereo PAL-G
1722	4822 242 10318	OFWL9360M mono SEC-DK
1740	4822 242 72586	TPS 5.5MB-TF20 PAL-G
1740	4822 242 81572	TPS 6.0MB-TF21 PAL-I
1740	4822 242 81301	TPS 6.5MB-TF21 SEC-K'
1745	4822 242 70279	SFE 6.0MB SEC-L' PAL-I
1745	4822 242 10428	EFCT5R5YS5A PAL-G
1745	4822 242 10429	EFCT6R5YS5A SEC-DK
1746	4822 242 10428	EFCT5R5YS5A
1746	4822 242 10429	EFCT6R5YS5A SEC-DK/K-NIC
1747	4822 242 10563	EFCT5R74YS5A stereo FM
1748	4822 242 10754	EFCT6R25YS5A stereo DK
1781	4822 242 82059	Crystal 10 MHZ

CAPACITORS

2001	4822 126 10002	100nF20%Y5V	25V
2002	4822 122 33177	10nF 20% X7R	50V
2003	4822 126 10002	100nF20%Y5V	25V
2004	4822 122 33177	10nF 20% X7R	50V
2005	4822 124 23055	22µF20%	16V
2006	4822 126 13222	390pF 2% np0	63V
2007	5322 122 32966	39pF 5%np0	50V
2008	5322 122 32658	22pF 5%	50V
2009	4822 126 10002	100nF20%Y5V	25V
2010	4822 124 80987	220µF20%	6.3V
2011	4822 122 33177	10nF 20% X7R	50V
2012	4822 124 11569	4.7µF 20%	25V
2013	4822 126 10002	100nF20%Y5V	25V
2014	4822 124 80975	0.47µF20%	50V
2015	4822 126 10002	100nF20%Y5V	25V
2016	4822 126 10002	100nF20%Y5V	25V
2017	4822 124 22826	10µF	16V
2018	5322 122 32658	22pF 5%	50V
2019	4822 124 22826	10µF	16V
2020	4822 124 22826	10µF	16V
2021	4822 124 22826	10µF	16V
2022	4822 126 10002	100nF20%Y5V	25V
2023	4822 122 33177	10nF 20% X7R	50V
2024	4822 126 10002	100nF20%Y5V	25V
2025	4822 124 11568	47µF 20%	16V
2026	4822 122 33575	220pF 5%	50V
2027	4822 122 33177	10nF 20% X7R	50V

2028	4822 122 33177	10nF 20% X7R	50V
2029	4822 122 33177	10nF 20% X7R	50V
2030	4822 122 33177	10nF 20% X7R	50V
2031	4822 126 10002	100nF20%Y5V	25V
2032	4822 124 11568	47µF 20%	16V
2033	4822 126 10002	100nF20%Y5V	25V
2034	4822 122 33177	10nF 20% X7R	50V
2035	4822 122 33177	10nF 20% X7R	50V
2036	4822 122 33515	82pF 5%	63V
2037	4822 126 14124	220pF 2%	50V
2038	5322 126 13691	27pF 5%	63V for 2 heads
2038	5322 122 32659	33pF 5%	50V for 4 heads
2039	4822 124 23053	1µF20%	63V
2040	5322 122 32654	22nF10%X7R	63V
2041	4822 124 23053	1µF20%	63V
2042	4822 122 33797	47nF20%Y5V	50V
2043	4822 124 41969	1µF20%	50V
2044	4822 124 23053	1µF20%	63V
2045	4822 126 13196	100nF10%X7R	50V
2046	5322 122 34123	1nF10%X7R	50V
2048	5322 122 31873	2.7pF0.5%	100V
2047	4822 122 33177	10nF 20% X7R	50V
2049	4822 124 11568	47µF 20%	16V
2054	4822 124 41969	1µF20%	50V
2055	4822 122 33177	10nF 20% X7R	50V
2059	4822 124 23053	1µF20%	63V
2064	5322 122 31946	27pF 5%	63V
2066	4822 122 33177	10nF 20% X7R	50V
2080	5322 122 32658	22pF 5%	50V
2081	4822 122 33177	10nF 20% X7R	50V
2082	4822 122 33177	10nF 20% X7R	50V
2083	4822 122 33177	10nF 20% X7R	50V
2084	4822 122 33177	10nF 20% X7R	50V
2085	4822 126 10002	100nF20%Y5V	25V
2086	4822 124 11568	47µF 20%	16V
2087	4822 122 33177	10nF 20% X7R	50V
2100	4822 122 33177	10nF 20% X7R	50V
2101	5322 122 32531	100pF 5%	50V
2102	5322 122 32658	22pF 5%	50V
2103	5322 122 34123	1nF10%X7R	50V
2104	4822 122 33177	10nF 20% X7R	50V
2105	4822 122 33177	10nF 20% X7R	50V
2106	4822 122 33177	10nF 20% X7R	50V
2107	4822 122 33177	10nF 20% X7R	50V
2108	5322 122 33538	150pF 2%	63V
2109	5322 122 32481	15pF 5%	50V
2110	4822 126 10002	100nF20%Y5V	25V
2111	4822 126 13694	68pF 1%	63V
2112	4822 122 33177	10nF 20% X7R	50V
2113	4822 126 10002	100nF20%Y5V	25V
2115	4822 122 33575	220pF 5%	50V
2116	4822 122 33177	10nF 20% X7R	50V
2117	5322 122 34123	1nF10%X7R	50V
2118	5322 122 32659	33pF 5%	50V
2119	5322 122 32531	100pF 5%	50V for mstd /39
2119	4822 122 33797	47nF 20%	50V
2121	5322 122 34123	1nF10%X7R	50V
2122	4822 122 33177	10nF 20% X7R	50V
2123	4822 126 10002	100nF20%Y5V	25V
2124	4822 126 10002	100nF20%Y5V	25V
2125	4822 122 33515	82pF 5%	63V
2126	5322 122 31946	27pF 5%	63V
2128	4822 122 33515	82pF 5%	63V
2129	4822 122 33515	82pF 5%	63V
2130	4822 122 33575	220pF 5%	50V
2132	5322 122 32269	6.8pF 5%	50V
2133	5322 122 32452	47pF 5%	63V
2134	4822 122 33575	220pF 5%	50V
2135	5322 122 31946	27pF 5%	63V
2137	4822 116 10056	VDR 0805 1MA/ 8VMAX	63V
2138	4822 116 10056	VDR 0805 1MA/ 8VMAX	63V
2150	4822 122 33177	10nF 20% X7R	50V
2151	4822 126 13061	220nF20% Y5V	25V
2152	4822 124 11568	47µF 20%	16V
2153	5322 122 32654	22nF 10% X7R	63V

2154	4822 122 33177	10nF 20% X7R	50V
2155	4822 122 33177	10nF 20% X7R	50V
2156	4822 122 33177	10nF 20% X7R	50V
2157	4822 122 33177	10nF 20% X7R	50V
2158	4822 122 33177	10nF 20% X7R	50V
2159	4822 122 33177	10nF 20% X7R	50V
2160	4822 122 33177	10nF 20% X7R	50V
2161	4822 122 33177	10nF 20% X7R	50V
2162	5322 122 32268	470pF 10%	50V
2163	5322 122 32531	100pF 5%	50V
2203	5322 122 32481	15pF 5%	50V
2204	5322 122 32481	15pF 5%	50V
2210	4822 122 33177	10nF 20% X7R	50V
2211	4822 124 81112	220µF20%	10V
2212	4822 126 13061	220nF20% Y5V	25V
2220	4822 124 23055	22µF20%	16V
2230	4822 122 33177	10nF 20% X7R	50V
2231	4822 122 33797	47nF20%Y5V	50V
2232	4822 122 33177	10nF 20% X7R	50V
2233	4822 122 33177	10nF 20% X7R	50V
2251	4822 126 10002	100nF20%Y5V	25V
2252	4822 126 10002	100nF20%Y5V	25V
2297	4822 124 11968	220mF +80-20%	5.5V
2300	4822 124 80407	1µF20%	50V
2301	4822 124 80407	1µF20%	50V
2302	4822 124 80407	1µF20%	50V
2308	5322 122 32531	100pF 5%	50V
2310	4822 126 10002	100nF20%Y5V	25V
2311	4822 122 33177	10nF 20% X7R	50V
2313	4822 122 33575	220pF 5%	50V
2314	4822 126 10002	100nF20%Y5V	25V
2315	4822 122 33177	10nF 20% X7R	50V
2316	4822 122 33797	47nF20%Y5V	50V
2317	5322 122 32654	22nF10%X7R	63V
2318	4822 124 22263	220µF20%	25V
2319	5322 122 32654	22nF10%X7R	63V
2320	5322 122 32654	22nF10%X7R	63V
2350	4822 126 14125	470pF 2%	50V
2353	4822 126 13196	100nF 10% X7R	25V
2354	4822 126 10002	100nF20%Y5V	25V
2355	5322 122 34123	1nF10%X7R	50V
2356	4822 124 23053	1µF20%	63V
2357▲	4822 126 13841	1nF 20%	250V
2358	4822 126 10002	100nF20%Y5V	25V
2359	4822 126 13061	220nF20% Y5V	25V
2360▲	4822 121 10667	68nF 20%	275V
2361	4822 124 22864	47µF	50V
2362▲	4822 124 11969	22µF 20%	400V
2363	4822 124 22864	47µF	50V
2364	4822 124 11899	220µF 20%	25V
2365	4822 124 11971	470µF 20%	16V
2366	4822 126 14126	47pF 5%	2KV
2367	4822 124 11899	220µF 20%	25V
2368	4822 122 31175	1nF 10%	500V
2369	4822 126 10002	100nF20%Y5V	25V
2370	4822 124 23052	100µF20%	16V
2371	4822 124 11971	470µF 20%	16V
2372	4822 126 13061	220nF20% Y5V	25V
2373	4822 124 11486	220µF 20%	16V
2374	4822 124 11971	470µF 20%	16V
2375	4822 121 42004	10nF 10%	400V
2376	4822 124 22833	10µF	50V
2378	4822 121 42004	10nF 10%	400V
2379	5322 126 10223	4.7nF10%X7R	63V
2385	4822 124 11486	220µF 20%	16V
2386	5322 122 32268	470pF 10%	50V
2400	4822 122 33177	10nF 20% X7R	50V
2401	4822 124 23055	22µF20%	16V
2403	5322 122 32658	22pF 5%	50V
2404	5322 122 32658	22pF 5%	50V
2416	4822 126 10002	100nF20%Y5V	25V
2417	4822 124 81295	47µF20%	6.3V
2440	4822 124 81029	100µF20%	25V
2441	4822 126 10002	100nF20%Y5V	25V
2442	4822 122 33177	10nF 20% X7R	50V

2455	4822 122 33175	2.2nF 20% X7R	50V
2459	4822 124 22263	220µF20%	25V
2461	5322 126 10223	4.7nF10%X7R	63V
2463	4822 124 23027	47µF	6.3V
2464	5322 126 10223	4.7nF10%X7R	63V
2465	4822 122 33175	2.2nF 20% X7R	50V
2466	4822 124 23027	47µF	6.3V
2467	4822 122 33342	33nF10%X7R	63V
2468	4822 126 10002	100nF20%Y5V	25V
2470	4822 122 33177	10nF 20% X7R	50V
2471	4822 122 33177	10nF 20% X7R	50V
2472	5322 122 32531	100pF 5%	50V
2473	5322 122 32531	100pF 5%	50V
2474	5322 122 32531	100pF 5%	50V
2501	4822 126 10002	100nF20%Y5V	25V
2502	4822 124 22826	10µF	16V
2503	4822 124 22826	10µF	16V
2504	4822 116 10056	VDR 0805 1MA/ 8VMAX	for stereo
2504	5322 122 32268	470pF 10%	50V for mono
2505	5322 122 32268	470pF 10%	50V for mono
2505	4822 116 10056	VDR 0805 1MA/ 8VMAX	for stereo
2506	4822 116 10056	VDR 0805 1MA/ 8VMAX	for stereo
2506	5322 122 32268	470pF 10%	50V for mono
2507	4822 116 10056	VDR 0805 1MA/ 8VMAX	
2508	4822 126 10002	100nF20%Y5V	25V
2509	5322 122 32268	470pF 10%	50V for mono
2509	4822 116 10056	VDR 0805 1MA/ 8VMAX	for stereo
2510	5322 122 32268	470pF 10%	50V for mono
2510	4822 116 10056	VDR 0805 1MA/ 8VMAX	for stereo
2511	4822 116 10056	VDR 0805 1MA/ 8VMAX	for stereo
2511	5322 122 32268	470pF 10%	50V for mono
2512	4822 116 10056	VDR 0805 1MA/ 8VMAX	
2514	4822 124 80483	47µF	6.3V
2515	4822 126 10002	100nF20%Y5V	25V
2516	4822 124 11568	47µF 20%	16V
2517	4822 126 10002	100nF20%Y5V	25V
2519	4822 126 10002	100nF20%Y5V	25V
2520	4822 126 10002	100nF20%Y5V	25V
2521	4822 126 10002	100nF20%Y5V	25V
2523	4822 126 10002	100nF20%Y5V	25V
2524	4822 126 10002	100nF20%Y5V	25V
2525	4822 126 10002	100nF20%Y5V	25V
2526	4822 126 10002	100nF20%Y5V	25V
2527	4822 126 10002	100nF20%Y5V	25V
2530	4822 126 13061	220nF20% Y5V	25V
2540	4822 126 10002	100nF20%Y5V	25V
2541	4822 122 33175	2.2nF 20% X7R	50V
2542	4822 122 33342	33nF10%X7R	63V
2543	4822 126 13482	470nF80/20%	16V
2545	4822 126 10002	100nF20%Y5V	25V
2600	5322 126 10184	680p 5%	50V
2601	4822 122 33175	2.2nF 20% X7R	50V
2602	4822 124 22826	10µF	16V
2603	4822 122 33177	10nF 20% X7R	50V
2604	4822 124 22739	100µF	50V for mono
2604	4822 124 22826	10µF	16V for stereo
2605	5322 122 34123	1nF10%X7R	50V
2606	4822 126 10002	100nF20%Y5V	25V
2608	4822 122 33177	10nF 20% X7R	50V
2617	4822 124 11568	47µF 20%	16V
2618	5322 122 31863	330pF 5%	50V
2619	4822 124 11568	47µF 20%	16V
2620	4822 121 51655	47nF	50V
2621	5322 122 34123	1nF10%X7R	50V
2622	4822 121 43873	27nF 5%	50V
2646	4822 126 13482	470nF80/20%	16V
2647	4822 126 10002	100nF20%Y5V	25V
2648	4822 124 23055	22µF20%	16V
2650	4822 126 10002	100nF20%Y5V	25V
2651	4822 124 11568	47µF 20%	16V
2652	4822 124 22826	10µF	16V
2656	4822 126 14127	39nF 10%	50V

Motherboard PAL, SECAM, MONO, STEREO

Motherboard PAL, SECAM, MONO, STEREO

2863	4822 126 13061	220nF20% Y5V	25V
2864	4822 126 13061	220nF20% Y5V	25V
2865	5322 126 10223	4.7nF10%X7R	63V
2866	4822 124 11568	47uF 20%	16V
2867	4822 124 22826	10uF	16V
2868	4822 126 13061	220nF20% Y5V	25V
2869	5322 126 10223	4.7nF10%X7R	63V
2870	4822 124 11568	47uF 20%	16V
2871	4822 124 22826	10uF	16V
2872	4822 124 22826	10uF	16V
2873	4822 124 22826	10uF	16V
2874	4822 124 22826	10uF	16V
2875	4822 124 22826	10uF	16V
2876	4822 124 22826	10uF	16V
2877	4822 124 22826	10uF	16V
2880	4822 124 22826	10uF	16V
2881	4822 124 22826	10uF	16V
2882	5322 126 10223	4.7nF10%X7R	63V
2883	5322 116 80853	560pF 5%	63V
2884	5322 126 10223	4.7nF10%X7R	63V
2885	5322 116 80853	560pF 5%	63V
2888	4822 124 22826	10uF	16V
2889	4822 126 10002	100nF20%Y5V	25V

RESISTORS

3000	4822 051 10102	1K00	2%	0.25W
3001	4822 051 10102	1K00	2%	0.25W
3002	4822 116 52228	680E	5%	0.5W
3003	4822 116 52228	680E	5%	0.5W
3004	4822 116 52228	680E	5%	0.5W
3005	4822 116 52303	8K2	5%	0.5W
3006	4822 116 52238	12K	5%	0.5W
3007	4822 100 12157	10K	30%	POT
3008	4822 116 83883	470E	5%	0.5W
3010	4822 051 10102	1K00	2%	0.25W
3011	4822 117 11449	2K2	1%	0.1W
3012	4822 117 11449	2K2	1%	0.1W
3013	4822 117 11721	1K3	2%	0.1W
3014	4822 116 83903	4K7	2%	0.1W
3015	4822 051 10102	1K00	2%	0.25W
3016	4822 051 20822	8K20	5%	0.1W
3017	4822 116 52249	1K8	5%	0.5W
3018	4822 116 83883	470E	5%	0.5W
3019	4822 051 20562	5K60	5%	0.1W
3020	4822 051 20224	220K0	5%	0.1W
3021	4822 050 11002	1K00	1%	0.4W
3022	4822 050 11002	1K00	1%	0.4W
3024	4822 051 20822	8K20	1%	0.1W
3024	4822 051 20682	6K80	5%	0.1W for 2/x
3027	4822 116 52264	27K	5%	0.5W
3028	4822 051 20562	5K60	5%	0.1W for 1 scart
3028	4822 051 20332	3K30	5%	0.1W for 2 scart
3029	4822 051 20225	2M20	5%	0.1W
3030	4822 116 52256	2K2	5%	0.5W
3031	4822 116 52256	2K2	5%	0.5W
3032	4822 117 11449	2K2	1%	0.1W
3033	4822 117 10965	18K	5%	0.5W
3034	4822 051 20153	15K00	5%	0.1W
3035	4822 117 11449	2K2	1%	0.1W
3036	4822 051 20471	470R0	5%	0.1W
3045	4822 116 83876	270E	5%	0.5W
3046	4822 050 11002	1K00	1%	0.4W
3048	4822 116 83884	47K	5%	0.5W
3050	4822 116 83872	220R	5%	0.5W for mstd
3050	4822 116 52175	100E	5%	0.5W
3051	4822 051 20224	220K0	5%	0.1W
3052	4822 116 52175	100E	5%	0.5W
3054	4822 117 11449	2K2	1%	0.1W
3055	4822 117 10361	680R	1%	0.1W
3080	4822 051 20568	5R60	5%	0.1W
3081	4822 051 20561	560R0	5%	0.1W
3082	4822 051 20471	470R0	5%	0.1W
3083	4822 051 20472	4K70	5%	0.1W

3084	4822 051 20472	4K70	5%	0.1W
3085	4822 051 20112	1K10	5%	0.1W
3086	4822 051 20331	330R0	5%	0.1W
3087	4822 116 52234	100K	5%	0.5W
3089	4822 051 20561	560R0	5%	0.1W
3100	4822 116 52219	330E	5%	0.5W
3101	4822 051 20332	3K30	5%	0.1W
3102	4822 116 52231	620E	5%	0.5W
3103	4822 116 52228	680E	5%	0.5W
3104	4822 050 11002	1K00	1%	0.4W
3105	4822 116 52222	390E	5%	0.5W
3106	4822 116 52226	560E	5%	0.5W
3107	4822 050 11002	1K00	1%	0.4W
3109	4822 116 52195	47E	5%	0.5W
3110	4822 116 52207	1K2	5%	0.5W
3111	4822 116 52256	2K2	5%	0.5W
3112	4822 051 10102	1K00	2%	0.25W
3113	4822 051 20561	560R0	5%	0.1W
3114	4822 117 10833	10K	1%	0.1W
3115	4822 116 52251	18K	5%	0.5W
3116	4822 051 10102	1K00	2%	0.25W
3117	4822 116 52256	2K2	5%	0.5W
3118	4822 116 52283	4K7	5%	0.5W
3119	4822 116 52271	33K	5%	0.5W
3120	4822 116 52303	8K20	5%	0.5W
3121	4822 051 20182	1K80	5%	0.1W
3122	4822 051 10102	1K00	2%	0.25W
3123	4822 116 83864	10K	5%	0.5W
3124	4822 116 52243	1K5	5%	0.5W
3125	4822 117 11449	2K2	1%	0.1W
3126	4822 051 10102	1K00	2%	0.25W
3127	4822 117 11449	2K2	1%	0.1W
3128	4822 117 11449	2K2	1%	0.1W
3129	4822 051 10102	1K00	2%	0.25W
3134	4822 117 11503	220R	1%	0.1W
3135	4822 117 11503	220R	1%	0.1W
3151	4822 051 20104	100K00	5%	0.1W
3152	4822 051 20393	39K00	5%	0.1W
3153	4822 117 10833	10K	1%	0.1W
3154	4822 117 12605	27K	1%	0.1W for 4/2
3154	4822 117 10354	22K	1%	0.1W for 4/0
3154	4822 117 12141	14K	1%	0.1W for 3/0
3154	4822 117 12342	18K	1%	0.1W for 2/x
3155	4822 117 11383	12K	1%	0.1W for 2/x
3155	4822 051 20153	15K00	5%	0.1W for 4/x
3156	4822 051 20331	330R00	5%	0.1W
3157	4822 051 20331	330R00	5%	0.1W
3158	4822 051 20472	4K70	5%	0.1W
3159	4822 100 12157	10K	30%	POT
3160	4822 100 12157	10K	30%	POT
3162	4822 051 20008	0R00 JUMP (0805)		
3163	4822 051 20008	0R00 JUMP (0805)		
3164	4822 051 20008	0R00 JUMP (0805)		
3165	4822 051 20008	0R00 JUMP (0805)		
3228	4822 116 83872	220E	5%	0.5W
3229	4822 117 10833	10K	1%	0.1W
3230	4822 117 10833	10K	1%	0.1W
3231	4822 116 52175	100E	5%	0.5W
3232	4822 051 20101	100E	5%	0.5W
3233	4822 116 83864	10K	5%	0.5W
3234	4822 116 83864	10K	5%	0.5W
3235	4822 116 83864	10K	5%	0.5W
3238	4822 116 83864	10K	5%	0.5W
3240	4822 116 52297	68K	5%	0.5W
3241	4822 051 20683	68K00	5%	0.1W
3242	4822 051 20683	68K00	5%	0.1W
3243	4822 051 20683	68K00	5%	0.1W
3244	4822 050 11002	1K00	1%	0.4W
3245	4822 051 20183	18K00	5%	0.1W
3250	4822 051 20153	15K00	5%	0.1W
3252	4822 117 11593	22E	5%	0.5W
3253	4822 050 24708	4R70	1%	0.6W
3254	4822 050 24708	4R70	1%	0.6W
3265	4822 116 83864	10K	5%	0.5W
3270	4822 117 11503	220R	1%	0.1W

3271	4822 117 11503	220R	1%	0.1W	
3273	4822 117 11503	220R	1%	0.1W	
3297	4822 051 20562	5K60	5%	0.1W	
3300	4822 116 52175	100E	5%	0.5W	
3301	4822 116 52175	100E	5%	0.5W	
3302	4822 116 52175	100E	5%	0.5W	
3303	4822 116 83883	470E	5%	0.5W	
3304	4822 050 11002	1K00	1%	0.4W	
3305	4822 116 52283	4K7	5%	0.5W	
3312	4822 116 52249	1K8	5%	0.5W	
3313	4822 116 83884	47K	5%	0.5W	
3350	4822 117 10833	10K	1%	0.1W	
3351	4822 051 20223	22K00	5%	0.1W	
3352	4822 051 20562	5K60	5%	0.1W	
3353	4822 117 10833	10K	1%	0.1W	
3354	4822 117 11449	2K2	1%	0.1W	
3355	4822 051 20822	8K20	5%	0.1W	
3356	4822 051 20223	22K00	5%	0.1W	
3357	4822 051 20472	4K70	5%	0.1W	
3358	4822 117 11149	82K	1%	0.1W	
3359	4822 051 20471	470R00	5%	0.1W	
3360	4822 051 20689	68R00	5%	0.1W	
3361▲	4822 052 10479	47R00	5%	0.33W	
3362	4822 051 20472	4K70	5%	0.1W	
3363	4822 050 21208	1R20	1%	0.6W	
3365	4822 116 83874	220K	5%	0.5W	
3369	4822 116 83882	39K	5%	0.5W	
3370	4822 116 83882	39K	5%	0.5W	
3374	4822 051 20271	270R00	5%	0.1W	
3375	4822 051 10102	1K00	2%	0.25W	
3376	4822 051 20008	0R00 JUMP (0805)			
3377	4822 051 20472	4K70	5%	0.1W	
3378	4822 051 20272	2K70	5%	0.1W	
3379	4822 101 11383	470E		POT	
3380	4822 051 10102	1K00	2%	0.25W	
3381	4822 051 20104	100K	5%	0.1W	
3382	4822 051 20104	100K	5%	0.1W	
3383	4822 116 83874	220K	5%	0.5W	
3384▲	4822 052 10101	100R00	5%	0.33W	
3385	4822 116 52269	3K30	1%	0.4W	
3386	4822 116 52219	330R00	1%	0.4W	
3387	4822 116 52226	560R00	5%	0.5W	
3387	4822 116 83883	470R00	5%	0.5W	for stereo
3388	4822 116 52226	560R00	5%	0.5W	
3388	4822 116 83883	470R00	5%	0.5W	for stereo
3389	4822 117 11449	2K2	1%	0.1W	
3390	4822 051 20224	220K00	5%	0.1W	
3391	4822 051 20224	220K00	5%	0.1W	
3392▲	4822 053 21335	3M30	5%	0.5W	
3393▲	4822 053 21335	3M30	5%	0.5W	
3394	4822 116 52256	2K2	5%	0.5W	
3395	4822 116 52257	22K	5%	0.5W	
3396	4822 116 52257	22K	5%	0.5W	
3397	4822 051 20101	100E	5%	0.5W	
3398	4822 051 20101	100E	5%	0.5W	
3400	4822 116 83864	10K	5%	0.5W	
3401	4822 116 83864	10K	5%	0.5W	
3402	4822 050 11002	1K00	1%	0.4W	
3403	4822 116 52256	2K2	5%	0.5W	
3404	4822 116 83864	10K	5%	0.5W	
3405	4822 116 83876	270E	5%	0.5W	
3406	4822 116 83864	10K	5%	0.5W	
3407	4822 116 83864	10K	5%	0.5W	
3408	4822 116 52256	2K2	5%	0.5W	
3410	4822 051 20472	4K70	5%	0.1W	
3411	4822 116 83864	10K	5%	0.5W	
3412	4822 116 52249	1K8	5%	0.5W	
3413	4822 050 11002	1K00	1%	0.4W	
3414▲	4822 052 10109	10R00	5%	0.33W	
3415▲	4822 052 10109	10R00	5%	0.33W	
3416	4822 116 52257	22K	5%	0.5W	
3417	4822 116 52283	4K7	5%	0.5W	
3418	4822 050 11002	1K00	1%	0.4W	
3419	4822 051 20472	4K70	5%	0.1W	
3420	4822 117 10833	10K	1%	0.1W	

Motherboard PAL, SECAM, MONO, STEREO

3515	4822 051 20682	6K80	5%	0.1W	3657	4822 051 20391	390R00	5%	0.1W
3516	4822 117 11503	220R	1%	0.1W	3702	4822 051 20101	100R00	5%	0.1W
3517	4822 116 52234	100K	5%	0.5W	3703	4822 051 20101	100R00	5%	0.1W
3518	4822 116 52234	100K	5%	0.5W	3704	4822 051 20182	1k80	5%	0.1W
3519	4822 051 20822	8K20	5%	0.1W	3705	4822 051 20223	22K00	5%	0.1W
3520	4822 117 10353	150R	1%	0.1W	3706	4822 051 20182	1k80	5%	0.1W
3521	4822 116 83961	6K8	5%		3707	4822 051 20101	100R00	5%	0.1W
3522	4822 051 20821	820R00	5%	0.1W	3708	4822 051 20101	100R00	5%	0.1W
3523	4822 051 20008	0R00 JUMP (0805)			3709	4822 051 20101	100R00	5%	0.1W
3524	4822 051 20759	75R00	5%	0.1W	3712	4822 051 20272	2K70	5%	0.1W
3525	4822 051 20822	8K20	5%	0.1W	3715	4822 051 20122	1K20	5%	0.1W
3526	4822 117 11449	2K20	1%	0.1W	3723	4822 051 20224	22K00	5%	0.1W
3527	4822 051 20472	4K70	5%	0.1W	3725	4822 051 20333	33K00	5%	0.1W
3528	4822 116 83884	47K	5%	0.5W	3726	4822 051 20273	27K00	5%	0.1W
3529	4822 051 20759	75R00	5%	0.1W	3729	4822 051 20391	390R00	5%	0.1W
3530	4822 051 20472	4K70	5%	0.1W	3730	4822 051 20183	18K00	5%	0.1W
3531	4822 051 20101	100R00	5%	0.1W	3731	4822 051 20183	18K00	5%	0.1W
3532	4822 051 20101	100R00	5%	0.1W	3732	4822 051 20391	390R00	5%	0.1W
3533	4822 051 20759	75R00	5%	0.1W	3735	4822 117 11448	180R	1%	0.1W for mono SEC
3534	4822 051 20008	0R00 JUMP (0805)			3735	4822 051 20391	390R00	5%	0.1W for stereo
3535	4822 117 11503	220E	1%	0.1W	3736	4822 051 20562	5K60	5%	0.1W
3536	4822 117 11503	220E	1%	0.1W	3737	4822 051 20392	3K90	5%	0.1W
3537	4822 116 83872	220E	5%	0.5W	3739	4822 051 20681	680R00	5%	0.1W
3538	4822 116 83961	6K8	5%		3742	4822 100 12158	22K	30%	POT
3539	4822 116 83961	6K8	5%		3744	4822 051 20154	150K00	5%	0.1W
3540	4822 117 11503	220E	1%	0.1W	3747	4822 051 20391	390R00	5%	0.1W for SECAM
3542	4822 117 11503	220E	1%	0.1W	3747	4822 051 20331	330R00	5%	0.1W for SEC DK
3543	4822 051 20471	470R00	5%	0.1W	3747	4822 051 20271	270E	5%	0.1W for PAL
3544	4822 117 11503	220R	1%	0.1W	3748	4822 100 12158	4K7		POT for PLL adj.
3545	4822 116 52256	2K2	5%	0.5W	3748	4822 100 12158	22K		POT for Bd. 1 adj.
3546	4822 116 52256	2K2	5%	0.5W	3749	4822 051 20681	680R00	5%	0.1W
3547	4822 051 20479	47R00	5%	0.1W	3750	4822 051 20331	330R00	5%	0.1W
3548	4822 051 20682	6K80	5%	0.1W	3760	4822 051 10102	1K00	2%	0.25W
3549	4822 051 20101	100R00	5%	0.1W	3760	4822 051 20821	820R00	5%	0.1W for PAL I
3550	4822 051 20105	1M00	5%	0.1W	3761	4822 051 10102	1K00	2%	0.25W
3551	4822 051 20105	1M00	5%	0.1W	3762	4822 051 10102	1K00	2%	0.25W
3552	4822 051 20682	6K80	5%	0.1W	3764	4822 051 10102	1K00	2%	0.25W for PAL
3553	4822 051 20101	100R00	5%	0.1W	3764	4822 051 20821	820R00	5%	0.1W for SECAM
3554	4822 051 20101	100R00	5%	0.1W	3765	4822 051 20562	5K60	5%	0.1W
3555	4822 051 20008	0R00 JUMP (0805)			3766	4822 051 20473	47K00	5%	0.1W
3556	4822 051 20474	470K00	5%	0.1W	3767	4822 051 20472	4K70	5%	0.1W
3557	4822 051 20104	100K00	5%	0.1W	3768	4822 051 20104	100K00	5%	0.1W
3560	4822 051 20008	0R00 JUMP (0805)			3769	4822 051 20472	4K70	5%	0.1W
3561	4822 051 20472	4K70	5%	0.1W	3770	4822 051 20104	100K00	5%	0.1W
3562	4822 051 20473	47K00	5%	0.1W	3771	4822 051 20472	4K70	5%	0.1W
3563	4822 051 20822	8K20	5%	0.1W	3772	4822 051 20104	100K00	5%	0.1W
3570	4822 116 83864	10K	5%	0.5W	3773	4822 051 20104	100K00	5%	0.1W
3571	4822 117 11383	12K	1%	0.1W	3780	4822 051 20101	100R00	5%	0.1W
3600	4822 116 52257	22K	5%	0.5W	3781	4822 051 20101	100R00	5%	0.1W
3601	4822 117 10833	10K	1%	0.1W	3782	4822 051 20333	33K00	5%	0.1W
3602	4822 051 20472	4K70	5%	0.1W	3790	4822 051 20472	4K70	5%	0.1W
3603	4822 051 20101	100R00	5%	0.1W	3790	4822 051 20008	0R0 jump		for K'-NIC
3604	4822 116 52257	22K	5%	0.5W	3791	4822 051 20562	5K60	5%	0.1W
3605	4822 117 11449	2K2	1%	0.1W	3791	4822 117 11507	6K80	1%	0.1W for K'-NIC
3606	4822 116 52195	47E	5%	0.5W	3792	4822 051 20472	4K70	5%	0.1W
3607	4822 051 20394	390K00	5%	0.1W	3793	4822 051 20562	5K60	5%	0.1W
3608	4822 117 11383	12K	1%	0.1W	3805	4822 051 20101	100R00	5%	0.1W
3609	4822 051 20822	8K20	5%	0.1W	3807	4822 051 20479	47R00	5%	0.1W
3610	4822 117 11449	2K2	1%	0.1W	3808	4822 051 20479	47R00	5%	0.1W
3611	4822 051 20101	100R00	5%	0.1W for mono	3813	4822 051 20472	4K70	5%	0.1W
3611	4822 051 20681	680R00	5%	0.1W for stereo	3815	4822 117 10833	10K	1%	0.1W
3612	4822 117 11449	2K2	1%	0.1W	3816	4822 117 10833	10K	1%	0.1W
3615	4822 051 20101	100R00	5%	0.1W	3817	4822 117 10833	10K	1%	0.1W
3618	4822 100 12159	100K	30%	POT	3818	4822 051 20153	15K00	5%	0.1W
3619	4822 051 20158	1R50	5%	0.1W	3819	4822 117 10833	10K	1%	0.1W
3620	4822 051 20473	47K00	5%	0.1W	3820	4822 117 10833	10K	1%	0.1W
3622	4822 051 20335	3M30	5%	0.1W	3821	4822 117 10833	10K	1%	0.1W
3623	4822 117 10833	10K	1%	0.1W	3822	4822 051 20153	15K00	5%	0.1W
3624	4822 051 20332	3K30	5%	0.1W	3823	4822 117 10833	10K	1%	0.1W
3625	4822 051 20339	33R00	5%	0.1W	3824	4822 117 11449	2K2	1%	0.1W
3626	4822 051 20224	220K00	5%	0.1W	3825	4822 051 20472	4K70	5%	0.1W
3627	4822 051 20563	56K00	5%	0.1W	3826	4822 051 20153	15K00	5%	0.1W
3638	4822 051 20109	10R00	5%	0.1W	3827	4822 051 20104	100K00	5%	0.1W
3655	4822 051 20681	680R00	5%	0.1W	3828	4822 117 10833	10K	1%	0.1W
3656	4822 116 83961	6K8	5%		3829	4822 117 10833	10K	1%	0.1W

▲... Safety component, use only this type

Motherboard PAL, SECAM, MONO, STEREO

3850	4822 117 12708	39K	1%	0.1W	4505	4822 117 10833	10K	1%	0.1W for STBY
3851	4822 051 20473	47K00	5%	0.1W	4511	4822 117 10833	10K	1%	0.1W for STBY
3852	4822 051 20392	3K90	5%	0.1W	4517	4822 117 10833	10K	1%	0.1W for STBY
3853	4822 051 20473	47K00	5%	0.1W	4523	4822 051 20008	0R00 JUMP (0805)		for ST/EJ
3854	4822 051 20392	3K90	5%	0.1W	4545	4822 117 10833	10K	1%	0.1W for STBY
3855	4822 051 20104	100K00	5%	0.1W	4569	4822 051 20182	1K80	5%	0.1W for DOWN
3856	4822 051 20104	100K00	5%	0.1W	4570	4822 051 20008	0R00 JUMP (0805)		for EJECT
3857	4822 051 20335	3M30	5%	0.1W	4579	4822 051 20472	4K700	5%	0.1W for UP
3858	4822 117 11449	2K2	1%	0.1W	4579	4822 117 12708	39K00	5%	0.1W for INST
3860	4822 051 20101	100R00	5%	0.1W	4583	4822 051 20182	1K80	5%	0.1W for DOWN
3861	4822 051 20101	100R00	5%	0.1W	4584	4822 117 12708	39K00	5%	0.1W for REC
3862	4822 051 20104	100K00	5%	0.1W	4591	4822 117 12708	39K00	5%	0.1W for INST
3863	4822 051 20104	100K00	5%	0.1W	4591	4822 051 20472	4K70	5%	0.1W for UP
3864	4822 051 20472	4K70	5%	0.1W	4591	4822 051 20182	1K80	5%	0.1W for DOWN
3865	4822 051 20472	4K70	5%	0.1W	4592	4822 117 12708	39K00	5%	0.1W for REC
3866	4822 051 20475	4M70	5%	0.1W	4595	4822 117 12708	39K00	5%	0.1W for INST
3867	4822 051 20475	4M70	5%	0.1W	4595	4822 051 20472	4K70	5%	0.1W for UP
3870	4822 051 20472	4K70	5%	0.1W	4610	4822 117 12708	39K00	5%	0.1W for REC
3871	4822 051 20223	22K00	5%	0.1W	4628	4822 117 12708	39K00	5%	0.1W for REC
3901	4822 051 20008	0R00 JUMP (0805)			4639	4822 051 20182	1K80	5%	0.1W for DOWN
3902	4822 051 20008	0R00 JUMP (0805)			4659	4822 051 20182	1K80	5%	0.1W for DOWN
3903	4822 051 20008	0R00 JUMP (0805)			4559	4822 051 20472	4K70	5%	0.1W for UP
3905	4822 051 20008	0R00 JUMP (0805)			4660	4822 117 12708	39K00	5%	0.1W for REC
3906	4822 051 20008	0R00 JUMP (0805)			4665	4822 117 12708	39K00	5%	0.1W for INST
3907	4822 051 20008	0R00 JUMP (0805)			4766	4822 051 20472	4K70	5%	0.1W for REW
3908	4822 051 20008	0R00 JUMP (0805)			4671	4822 051 20008	0R00 JUMP (0805)		for ST/EJ
3910	4822 051 20008	0R00 JUMP (0805)			4671	4822 051 20182	1K80	5%	0.1W for DOWN
3911	4822 051 20008	0R00 JUMP (0805)			4671	4822 051 20472	4K70	5%	0.1W for UP
3912	4822 051 20008	0R00 JUMP (0805)			4677	4822 051 20008	0R00 JUMP (0805)		for ST/EJ
3913	4822 051 20008	0R00 JUMP (0805)			4677	4822 051 20182	1K80	5%	0.1W for DOWN
3915	4822 051 20008	0R00 JUMP (0805)			4678	4822 117 10833	10K	1%	0.1W for WIND
3916	4822 051 20008	0R00 JUMP (0805)			4683	4822 051 20472	4K70	5%	0.1W for UP
3917	4822 051 20008	0R00 JUMP (0805)			4703	4822 117 12708	39K00	5%	0.1W for INST
3918	4822 051 20008	0R00 JUMP (0805)			4716	4822 051 20472	4K70	5%	0.1W for REW
3919	4822 051 20008	0R00 JUMP (0805)			4728	4822 051 20183	18K00	5%	0.1W for PLAY
3922	4822 051 20008	0R00 JUMP (0805)			4739	4822 051 20008	0R00 JUMP (0805)		for ST/EJ
3923	4822 051 20008	0R00 JUMP (0805)			4740	4822 051 20472	4K70	5%	0.1W for REW
3925	4822 051 20008	0R00 JUMP (0805)			4740	4822 051 20183	18K00	5%	0.1W for PLAY
3925	4822 051 20562	5K6 5% 0.1W		for K'-NIC	4740	4822 051 20182	1K80	5%	0.1W for STOP
3926	4822 051 20008	0R00 JUMP (0805)			4742	4822 117 10833	10K	1%	0.1W for WIND
3927	4822 051 20008	0R00 JUMP (0805)			4745	4822 051 20472	4K70	5%	0.1W for UP
3928	4822 051 20008	0R00 JUMP (0805)			4746	4822 051 20183	18K00	5%	0.1W for PLAY
3929	4822 051 20008	0R00 JUMP (0805)			4746	4822 051 20472	4K70	5%	0.1W for REW
3930	4822 051 20008	0R00 JUMP (0805)			4752	4822 051 20472	4K70	5%	0.1W for REW
3931	4822 051 20008	0R00 JUMP (0805)			4758	4822 051 20472	4K70	5%	0.1W for REW
3941	4822 051 20008	0R00 JUMP (0805)			4758	4822 051 20183	18K00	5%	0.1W for PLAY
3942	4822 051 20008	0R00 JUMP (0805)			4764	4822 117 12708	39K00	5%	0.1W for INST
3943	4822 051 20008	0R00 JUMP (0805)			4764	4822 051 20183	18K00	5%	0.1W for PLAY
3944	4822 051 20008	0R00 JUMP (0805)			4764	4822 051 20472	4K70	5%	0.1W for REW
3945	4822 051 20008	0R00 JUMP (0805)			4764	4822 051 20008	0R00 JUMP (0805)		EJECT
3946	4822 051 20008	0R00 JUMP (0805)			4772	4822 117 10833	10K	1%	0.1W for WIND
3947	4822 051 20008	0R00 JUMP (0805)			4787	4822 051 20008	0R00 JUMP (0805)		for ST/EJ
3950	4822 051 20008	0R00 JUMP (0805)							
3951	4822 051 20008	0R00 JUMP (0805)							
3956	4822 051 20008	0R00 JUMP (0805)							
3960	4822 051 20008	0R00 JUMP (0805)							
3961	4822 051 20008	0R00 JUMP (0805)							
3962	4822 051 20008	0R00 JUMP (0805)							
3965	4822 051 20008	0R00 JUMP (0805)							
3966	4822 051 20008	0R00 JUMP (0805)							
3967	4822 051 20008	0R00 JUMP (0805)							
3970	4822 051 20008	0R00 JUMP (0805)							
3972	4822 051 20008	0R00 JUMP (0805)							
3973	4822 051 20008	0R00 JUMP (0805)							
3980	4822 051 20008	0R00 JUMP (0805)							
3981	4822 051 20008	0R00 JUMP (0805)							
3984	4822 051 20008	0R00 JUMP (0805)							
3985	4822 051 20008	0R00 JUMP (0805)							
3986	4822 051 20008	0R00 JUMP (0805)							
3988	4822 051 20008	0R00 JUMP (0805)							
3989	4822 051 20008	0R00 JUMP (0805)							
3990	4822 051 20008	0R00 JUMP (0805)							
3998	4822 051 20008	0R00 JUMP (0805)							
3999	4822 051 20008	0R00 JUMP (0805)							
4501	4822 117 10833	10K	1%	0.1W for STBY					

COILS									
5000	4822 157 11234	10μH	5%						
5001	4822 152 20677	10μH							
5002	4822 152 20677	10μH							
5004	4822 157 11142	47μH	5%						
5005	4822 157 11145	150μH	5%						
5020	4822 157 10972	15μH	5%						
5026	4822 157 11228	LAN02TB101J							
5036	4822 157 11149	56μH	5%						
5080▲	4822 157 11226	47μH	5%						
5100	4822 157 63661	FIL LC VAR 4M286		5VS					
5101	4822 157 10972	15μH	5%						
5102	4822 157 11149	56μH	5%						
5103	4822 157 63661	FIL LC VAR 4M286		5VS					
5104	4822 157 11227	150μH	5%						
5105	4822 157 11227	150μH	5%						
5106	4822 157 11151	330μH	5%						
5107	4822 157 11228	LAN02TB101J							
5108	4822 157 63659	FIL LC VAR 1G072		5V2					
5111	4822 157 11229	15μH	5%						

Motherboard PAL, SECAM, MONO, STEREO

5112	4822 157 10972	15µH 5%
5113	4822 157 11145	150µH 5%
5114	4822 157 10972	15µH 5%
5115	4822 157 63717	6.8µH
5130	4822 157 71206	BLM21A10PT
5150▲	4822 157 53906	47µH
5200	4822 152 20677	10µH
5300▲	4822 157 53005	0.33µH 20%
5350	4822 157 51462	10µH
5351	4822 157 71461	22µH 10%
5352▲	4822 157 10454	Line filter
5353▲	4822 146 10786	SRW32ES-E01(TRAFO)
5353	4822 466 11688	ISOL. PLATE (TRAFO 5353)
5354	4822 157 51462	10µH
5355▲	4822 157 53005	0.33µH
5358	4822 157 60147	2.2µH
5361	4822 157 52286	2.2µH
5368	4822 157 60147	2.2µH
5400	4822 152 20677	10µH
5402	4822 152 20677	10µH
5601	4822 157 11249	10.000UH5%
5602	4822 157 11151	330µH 5%
5603	4822 157 53531	Coil
5604	4822 157 11251	3.3µH 10%
5605	4822 157 71206	BLM21A10PT
5700	4822 157 71206	BLM21A10PT
5702	4822 152 20677	10µH
5703	4822 152 20677	10µH
5705	4822 152 20677	10µH
5720	4822 157 11231	LAN02TB1R0J
5721	4822 157 70877	H292ONS-6785NK
5725	4822 157 70877	H292ONS-6785NK
5726	4822 051 20008	OR00 JUMP (0805)
5740	4822 157 11232	12µH 5% for SECAM LL'
5740	4822 157 11229	15µH 5% for PAL
5741	4822 157 11223	39µH 5%
5780	4822 157 70038	10mH 5%
5800	4822 157 11233	LAN02TB330J
5801	4822 152 20677	10µH
5810	4822 157 11234	10µH 5%
5831	4822 157 11235	LAN02TB220J

DIODES

6100	4822 130 30621	1N4148
6135	4822 130 34197	BZX79-B12 (MTZJ2C)
6250	4822 130 34197	BZX79-B12
6299	4822 130 31983	BAT85
6350	4822 130 30842	BAV21
6351	4822 130 31983	BAT85
6352	4822 130 42488	BYD33D
6353	4822 130 42488	BYD33D
6354	4822 130 80858	1N5062
6355	4822 130 42488	BYD33D
6356	4822 130 42488	BYD33D
6357	4822 130 10871	SBYV27-200
6358	5322 130 31938	BYV27-200
6359	4822 130 32715	SB340
6359	4822 130 83909	for stereo
6360	4822 130 83147	BYW98-200RL
6360	4822 130 83147	for mono
6371	4822 130 42488	DF06M
6372	4822 130 34142	BYD33D
6460	4822 130 10231	BZX79-B33
6500	4822 130 34197	SET: 2x Sens + 1x Led
6501	4822 130 34197	BZX79-B12
6502	4822 130 34197	BZX79-B12
6509	4822 130 34197	BZX79-B12
6510	4822 130 34197	BZX79-B12
6511	4822 130 10884	MTZJ18C
6516	4822 130 34278	BZX79-B6V8
6530	4822 130 10654	BAT254
6601	4822 130 30861	BZX79-B7V5
6760	4822 130 10414	BA792
6761	4822 130 10414	BA792

TRANSISTORS & IC's

7000	4822 130 42718	BFS20
7001	4822 130 10872	PDTA124ET
7002	4822 130 60511	BC847B
7003	4822 209 15526	LC89980M
7004	4822 130 42353	BFS20
7005	5322 130 60508	BC857B
7006	4822 130 60511	BC847B
7007	4822 209 16883	LA71527M
7008	5322 130 60508	BC857B
7009	4822 130 10872	PDTA124ET
7011	4822 130 60511	BC847B
7020	4822 130 63732	PDTA124ET
7021	5322 130 60508	BC857B
7080	4822 209 90421	STV5712
7085	4822 130 60511	BC847B
7100	4822 130 60511	BC847B
7101	4822 130 60511	BC847B
7102	4822 209 73852	PMBT2369
7103	4822 130 60511	BC847B
7104	4822 130 63732	PDTA124ET
7105	5322 130 60508	BC857B
7106	4822 130 60511	BC847B
7110	4822 209 90189	TDA4722/V2
7150	4822 209 13121	STV5742
7151	4822 209 15548	STV5744AD
7153	4822 130 60511	BC847B
7201	4822 209 17472	TMP87CS71F ADCM1-xP
7201	4822 209 17473	TMP87CS71F ADCM2-xU
7201	4822 209 17474	TMP87CS71F ADCM3-xU
7201	4822 209 17475	TMP87CS71F ADCH1-xP
7201	4822 209 17476	TMP87CS71F ADCH2-xU
7201	4822 209 17477	TMP87CS71F ADCH3-xU
7201	4822 209 17478	TMP87CS71F ADCH4-xU
7201	4822 209 17479	TMP87CS71F ADCH5-xU
7201	4822 209 17481	TMP87CS71F ADCF1-xP
7201	4822 209 17482	TMP87CS71F ADCF2-xU
7201	4822 209 17483	TMP87CS71F ADCF3-xU
7202	4822 135 00283	25U39136SA (Display)
7203	4822 212 30842	TSOP1736 (IR-receiver)
7231	4822 130 63732	PDTA124ET
7300	4822 209 13126	TDA5241
7301	4822 130 10872	PDTA124ET
7350▲	4822 130 63794	STP3NA60
7350/2	4822 255 10387	COOLING BLOCK (HEAT SINK)
7350/3	4822 502 14482	SCREW M3x6
7351▲	4822 209 32126	SOC1012T (OPTO)
7352	4822 209 81397	TL431CLpST
7353	4822 130 10214	STD17N06
7354	4822 209 90025	MCA4603P
7356	4822 130 60511	BC847B
7357	4822 130 10214	STD17N06
7358	4822 130 40995	BD438
7359	4822 130 60511	BC847B
7400	4822 209 17484	TMP91C642AF ATDP4-xU
7420	4822 209 90313	L4812CV for stereo
7420	4822 209 81726	MC7812CT for mono
7440	4822 209 30146	L2722
7455	4822 130 10872	PDTA124ET
7456	4822 130 60511	BC847B
7457	4822 130 60511	BC847B
7458	4822 130 60511	BC847B
7460	4822 209 30836	SA11310/N2
7461	4822 130 10231	SET: 2x Sens + 1x Led
7462	4822 130 10231	SET: 2x Sens + 1x Led
7463	4822 130 41344	BC337-40
7464	4822 130 10233	TCRT5000L
7465	4822 130 10233	TCRT5000L
7466	4822 130 10234	TCST1030L
7467	4822 130 60511	BC847B
7468	4822 130 60511	BC847B
7469	4822 130 60511	BC847B
7500	4822 130 60511	BC847B

7501	5322 130 60508	BC857B
7502	4822 130 60511	BC847B
7505	4822 130 63732	PDTA124ET
7506	4822 130 10872	PDTA124ET
7507	4822 209 90016	STV6400
7510	5322 130 42755	BC847C
7511	4822 130 42615	BC817-40
7512	5322 130 42755	BC847C
7513	5322 209 14481	HEF4053BT
7513	5322 209 14481	HEF4053BT
7540	4822 209 15504	SDA5650 for VPS/PDC
7540	4822 209 32728	SDA5642.6 for VPS only
7600	4822 130 60373	BC856B
7601	5322 130 60159	BC846B
7602	5322 130 60159	BC846B
7603	4822 130 60511	BC847B
7604	4822 130 41715	BC328-40
7609	4822 130 42615	BC817-40
7720	4822 209 90288	TDA9800T/V3
7721	4822 209 90018	TDA9812T for SECAM mono
7721	4822 209 90431	TDA9813T/V2 for PAL FM stereo
7721	4822 209 90452	TDA9814T/V3 for SECAM stereo
7722	5322 209 14481	HEF4053BT
7723	5322 130 60508	BC857B
7724	5322 130 42755	BC847C
7725	4822 130 60511	BC847B
7726	4822 130 63732	PDTA124ET
7728	4822 130 10802	BSS138
7729	4822 130 60511	BC847B
7730	4822 130 60511	BC847B
7731	4822 130 63732	PDTA124ET
7780	4822 209 32501	TDA9840T/V2
7800	4822 209 15524	LC74781-9663
7810	4822 130 42718	BFS20
7850	4822 209 15525	TDA9604H/N1
7851	4822 130 60511	BC847B
7852	4822 130 60511	BC847B
7860	4822 209 60177	LM339D
7890	4822 209 33113	ST24C08CB6 for GEMSTAR
7890	4822 209 30953	ST24C04CB6

MISCELLANEOUS

1700▲	4822 071 52501	Fuse	250mA
1710	4822 242 10433	Crystal	8,192 MHz
1970	4822 265 10943	CONN	11P

CAPACITORS

2700	4822 122 33172	390pF	5%	50V
2701	5322 122 32448	10pF	5%	50V
2703	4822 126 10002	100nF	20%	25V
2704	4822 122 33575	220pF	5%	50V
2705	4822 124 22826	10µF		16V
2706	4822 124 22826	10µF		16V
2707	4822 126 13061	220nF	20%	25V
2708	5322 122 32654	22nF	10%	63V
2709	5322 122 32531	100pF	5%	50V
2710	5322 122 32531	100pF	5%	50V
2714	4822 124 23027	47µF		6.3V
2716	4822 124 23027	47µF		6.3V
2718	4822 126 10002	100nF	20%	25V
2719	4822 122 33175	2.2nF	20%	50V
2720	4822 122 33175	2.2nF	20%	50V
2721	4822 126 13061	220nF	20%	25V
2722	4822 122 33175	2.2nF	20%	50V
2723	4822 122 33175	2.2nF	20%	50V
2725	4822 124 23053	1µF	20%	63V
2726	4822 122 33797	47nF	20%	50V
2727	4822 124 23027	47µF		6.3V
2728	4822 126 10002	100nF	20%	25V
2729	4822 124 22826	10µF		16V
2731	4822 124 22826	10µF		16V
2732	4822 126 10002	100nF	20%	25V
2733	4822 124 23027	47µF		6.3V
2734	5322 122 32654	22nF	10%	63V
2736	4822 126 10002	100nF	20%	25V
2752	4822 126 13061	220nF	20%	25V
2753	4822 126 13061	220nF	20%	25V

RESISTORS

3700	4822 051 10102	1K	2%	0.25W
3701	4822 051 20101	100R	5%	0.1W
3702	4822 051 20223	22K	5%	0.1W
3703	4822 051 20104	100K	5%	0.1W
3704	4822 117 11449	2K2	1%	0.1W
3705	4822 051 20392	3K9	5%	0.1W
3707	4822 116 52276	3K9	5%	0.5W
3708	4822 117 11449	2K2	1%	0.1W
3710	4822 051 20334	330K	5%	0.1W
3711	4822 116 52175	100E	5%	0.5W
3712	4822 116 52175	100E	5%	0.5W
3713	4822 051 20182	1K8	5%	0.1W
3714	4822 051 20333	33K	5%	0.1W
3715	4822 117 10833	10K	1%	0.1W
3720	4822 117 10833	10K	1%	0.1W
3721	4822 117 10833	10K	1%	0.1W
3722	4822 117 10833	10K	1%	0.1W
3723	4822 117 10833	10K	1%	0.1W
3790	4822 051 20008	0R00	JUMP (0805)	
3792	4822 051 20008	0R00	JUMP (0805)	
3793	4822 051 20008	0R00	JUMP (0805)	
3794	4822 051 20008	0R00	JUMP (0805)	
3795	4822 051 20008	0R00	JUMP (0805)	
3796	4822 051 20008	0R00	JUMP (0805)	
3797	4822 051 20008	0R00	JUMP (0805)	

COILS

5700	4822 157 63717	6.8mµH	
5703	4822 157 71206	BLM21A10	
5704	4822 157 71206	BLM21A10	
5705	4822 157 71206	BLM21A10	
5706	4822 157 71206	BLM21A10	
5707	4822 157 71206	BLM21A10	

DIODES

6700	4822 130 10652	BB149	
6701	4822 130 83757	BAS216	

TRANSISTORS & IC's

7700	4822 209 14809	SAA7284Z	
7701	5322 209 61487	LM358N	

CABLES

8001	4822 320 11889	FFC TD1-1961	
8002	4822 323 10374	CABLE TREE TD2-1962	
8003	4822 320 11891	FFC TD3-1944	
8004	4822 320 11892	FFC TD4-1930	
8005	4822 320 11888	FFC 1901-1945	
8006	4822 320 12343	FFC 1103-1711	
8007	4822 320 11891	FFC 1710-1750	
8008	4822 323 10373	ESD-GND CONN.	

▲ 4822 321 10886	MAINS CORD (+FUSE) for UK
▲ 4822 321 10249	MAINS CORD
4822 320 50377	ANTENNA cable
4822 321 63002	SCART cable

SUB MODULS

4822 214 12236	QNIC Nicam print
4822 214 12238	CINCH print rear
4822 214 13088	ASP10 Shuttle print
4822 214 13089	ACP10 CINCH print front